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SEPTEMBER 1960

★ ★ EDITION

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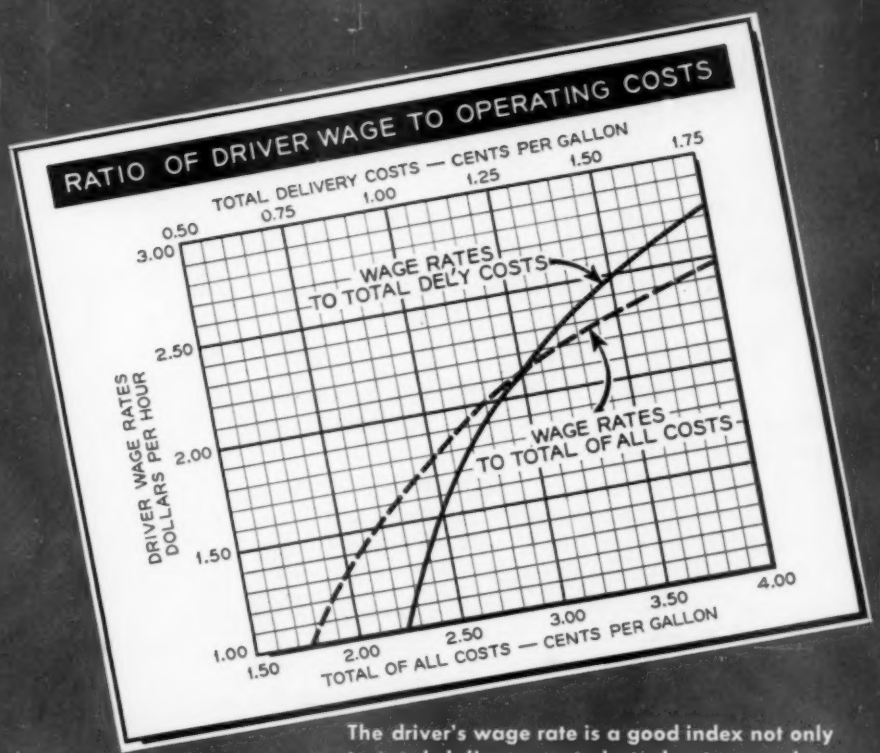
ANNUAL FUELOIL MANAGEMENT ECONOMIC ANALYSIS



The driver's wage rate is a good index not only to total delivery costs but also to complete operating costs. In high wage areas, all other costs are usually high in proportion.

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Four B-72D BiRotors and 510 Valves move heating oils in bulk at John S. Turney installation in Drexel Hill, Pa.

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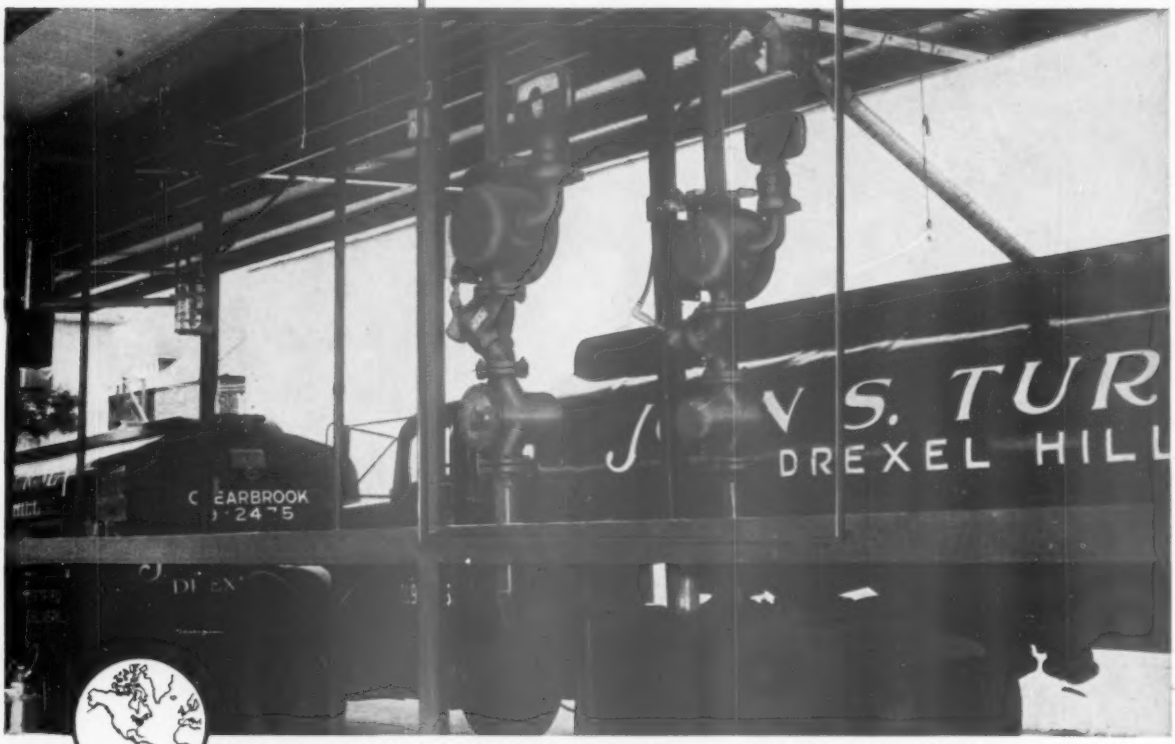

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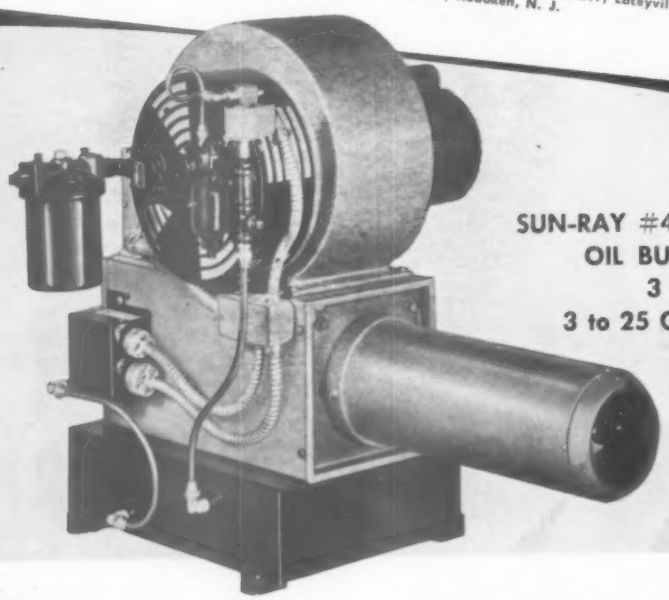

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SEPTEMBER fueloil & oilheat 1960

VOLUME 19 NUMBER 9

Editorial, circulation and advertising Office: 2 West 45th St., New York 36, N. Y.

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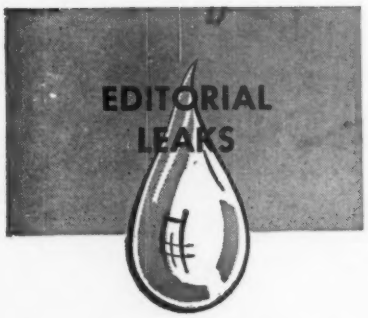
Among other things . . .

This issue is purposely top-heavy with features about fueloil dealers and their businesses. "It was a good Season," beginning on page 55, is our annual look at the economics of fueloil operations. There's much valuable information about fueloil management, mighty useful as general knowledge and also as a check against your own company figures.

Next, "Getting the most from your Trucks" suggests some very practical considerations on the efficient and profitable use of your rolling stock.

Two other fine stories highlight the varied facets of fueloil dealerships. Beginning on page 67 is a very complete description of a well thought-out plan to compensate drivers more when they produce more; on page 78 begins an interesting account of how C. B. Stone, Inc., expanded a successful fueloil business to include air-conditioning contracting.



THIS ISSUE features among other things our once-a-year roundup of management figures having to do with running a fueloil business. Some of them will be useful to you, others to others. The significant point is that such helpful yardsticks would not be possible at all except for the big lift given us by a few hundred marketers like yourselves from all of the principal areas where oilheating is popular. We miss the deep South and Southwest but there's very little furnace oil burned there.

After the issue has been passed around to read, get it back to the boss's desk so he'll have a chance to check it for items from time to time.

Mainly, though, what we're trying to say is that we've got a wonderful industry when it contains folks like you who have helped so much, for the benefit of all.

THE MOST IMPORTANT answer in the whole investigation was that while margins and profits are off a little, they're still mighty favorable considering the general trouble of the rest of the oil industry. The refiners seem to like us, at least enough to let us prosper.

LAST MONTH on this page was an item about a gas company raising its rates on kitchen uses so it could drop them on heating, with an opinion that franchised exclusive institutions may not always play fair in competition.

Having gotten it off our chest we would have dropped it. But it reminded quite a lot of folks around the industry that they felt that way about it too, so the editor's mail picked up a bit on that point.

An Iowa friend sent an example of natural gas just coming to his town and the rates posted were $3.90 for the first 2,000 cubic feet, or $5.31 for the first 3,000 per month, while to do this they had to build a long pipeline extension at high cost.

The same utility in nearby towns of comparable size, where they have no new pipeline to pay for, sells the same units at $4.74 and $6.76, respectively. Our oil man is convinced in his own mind that the low opening rates are to fight oil heat.

An industry leader in Boston wrote on this wise:

"I suggest that your publication go all out in encouraging those concerned to start a general uproar on the specific points brought out in your remarks.

"1960 being an election year, what better time to organize a campaign directed to state officials, governors, state senators and representatives, public service officials, pointing out the specific issues and asking point blank what steps they are going to take to restrain the utilities from injuring small business in this way.

"May we expect your worthy publication to blazen the trail by bringing into focus the artful machinations of the gas house boys?"

GETTING BACK to the amount of work we do on the September management statistics, everything else has been crowded out of our minds, so we'll fill the rest of this page with some short paragraphs that have accumulated in the right hand drawer.

• Joseph B. Elliott, president of York Div., Borg-Warner, says that the auto industry is doing better at selling airconditioning than the heating industry. In 1950 just 3,000 cars were airconditioned, this year 750,000. Only 8% of homes are now airconditioned and unless a better selling job is done on the public the year 1975 will see only 20% of the houses with cooling.

• Dick Wright, Iron Fireman vice-president for engineering, talking to a group in Rochester, illustrated a point by saying, "We buy a book for $5 and then spend $2,000 to go to college to find out what's in the book."

• Gulf's vice-president, Charles Guzzo, had a new word for it. He spoke of the oil industry's "mutton-headed addiction to volume."

• The Virginia Electric & Power Co., Richmond, offers an outright cash subsidy to builders of $150 a house if they install electric heat. A smaller Southern utility pays $15 per kw of the connected heating load.

• President Eisenhower has signed the Coal Research and Development bill to establish an office of coal research in the Department of the Interior. This is nice going at the public trough. We have to do it through private research organizations like Battelle, but we'd rather.

• The Housatonic Public Service Co. advertises $100 allowance for your old furnace or boiler regardless of its age, make or condition toward the purchase of a new gas heating unit. "Don't pay a red cent until you've used the new equipment one full year, proving to yourself that gas is satisfactory."

• Don Ward, mastermind of the North Carolina Oil Jobbers Assn., says it's going to take some real hard selling by the oil industry to hold its position in the home heating field, now that the Carolina Power and Light Co. has a new rate of 1¢ per kwh for home heating.

• Bill Flood, president of Converse-Carlisle Co., Springfield, Mass., will give a customer $15 or 100 gallons of oil as appreciation for a reference that results in a new oil account. That's higher than usual, but certainly not high when you think what it costs to add new customers by several other methods.

• Someone has asked the question and we haven't studied it yet, but it's a good one . . . "What rate of growth is necessary in our fueloil industry to maintain steerageway?" In other words, how much have we got to keep growing each year to hold good feeling and confidence that will result in a continuation of satisfactory profits. You may have some ideas. Think about it.

Bob Gray

"We get 6 out of 10 new customers through our Yellow Pages advertising!"

says D. W. Simons, partner, Simons Fuel Oil, Warren, Mich.

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GOVERNMENT INFLUENCE ON FUELS

by James M. Collins

WASHINGTON — Some big oil issues may hit the headlines before Congress winds up its "special" bobtailed session in September, including oil import controls and the coal industry's drive for a "national fuels" policy "study", and some GOP strategists would like to see the oil and gas depletion issue come up on the Senate floor, too, where it could be used to show the split between Senator Kennedy (D., Mass.), who has voted for a cut in this tax allowance, and his running mate, Senator Johnson (D., Texas), who, of course, has supported the depletion allowance vigorously ever since he came to Congress in the 1930's.

Brewing a storm among New Englanders, particularly, on Capitol Hill, is the new October-December residual import level—just set by the Interior Department at 415,000 B/D (all of it East of the Rockies, since none is imported on the West Coast), which is only 15,000 B/D more than the coal industry had urged.

Just before the new figure was announced, the New England congressional delegation urgently sought a substantial increase in the quarterly quota to 560,000 B/D, which was the amount, they said, they need to forestall shortages and higher prices.

There is no possibility that any action will be taken in Congress either to set tighter controls on oil imports, or to loosen them up. But, there will be lots of talk and, perhaps, some action in the next Congress, particularly if Kennedy is elected President. However, Kennedy finds himself in somewhat of a dilemma on this issue—as well as the "fuels policy" push by the coal industry. In the spring, in West Virginia, when Kennedy was fighting for his political life, he made the coal industry some promises, and no doubt the coal industry will hold him to them. The strongest commitment Kennedy made then was to promise that "one of my first tasks" in the White House would be to establish a "national fuels policy".

Fuels Study is Pushed

Meantime, although the prospects for passage now appear slim, the wheels have been moving on the resolution sponsored by the coal industry to set up a joint congressional committee to make a "study" regarding the "need" for a national fuels policy.

The chances of this getting through the Senate appear to be fairly good —but the coal industry will have trouble getting action in the House, where a companion resolution was tabled in the Rules group, by a 6-to-6 tie vote early in June. The Senate Interior Committee has suggested to the Senate Rules Committee, that changes be made in the original measure, drafted by coal men, to eliminate some of the most objectionable language—such as the need for the proposed committee to study the "optimal allocation" of fuels—in effect "end use control".

A one-year, $150,000 study, along the lines of the toned-down resolution, has been suggested by Senate Interior Chairman Murray (D., Montana). At the moment, it is doubtful that it will pass Congress. But, this is one issue on which coal men do not intend to give up.

Oil Price Cut is Studied

At the same time that coal men are going all-out to hold down residual fuel oil imports (in order to stiffen prices for industrial fuel and strengthen their own market for coal), foreign oil prices are starting to shake down to realistic levels. Esso's cut in the Middle East, averaging about 12 cents per barrel, is creating repercussions throughout the oil world. Reason for the price cut was apparently two-fold: (1) Esso has decided that discounting off posted prices was so deep that the posted prices did not reflect the market and that these had to be brought in line with the market; (2) Complaints by consuming countries that Russian oil was much cheaper than oil from the Middle East.

Already, the Venezuelan government is sounding the alarm bell, and saying that it won't stand for any deep price cuts on Venezuelan oil. In addition, domestic producers are saying that the Middle East price cut shows the "need" more than ever for oil import controls (in order to hold such price cuts beyond the water's edge).

But, if history is any teacher, it would appear almost inevitable that any further price adjustments outside the U. S., will almost certainly affect domestic prices.

Arab Leaders are Unhappy

Whether Venezuela and the Arab countries can actually do anything to prevent price cuts on their oil, however, remains to be seen. Dr. Mohammad Salman, Arab League oil director, in a press conference here recently thought that the price cut by Esso in the Middle East was the result of a "trap", built by the Russians. He said that if such price changes are found to be more "political" than "economic", then the burden should be shared by all of the countries in the West.

Venezuela Pushes Oil Compact

More and more, the political leaders in both Venezuela and the Middle East seem to be seeing eye-to-eye on international oil prices and production. They believe that it would be better to restrict output and keep prices fairly high—but the big problem is how to do this without leaving the door wide open, competitively, to the Russians offering cheap crude.

Imports May be Cut

One result of the situation could be a further reduction in imports of crude oil and unfinished products—but this may not come until sometime in the fall, if then. But, top government officials are convinced that the domestic industry must be kept stable for national security, and most of them are not satisfied with the continuing "recession" in oil.

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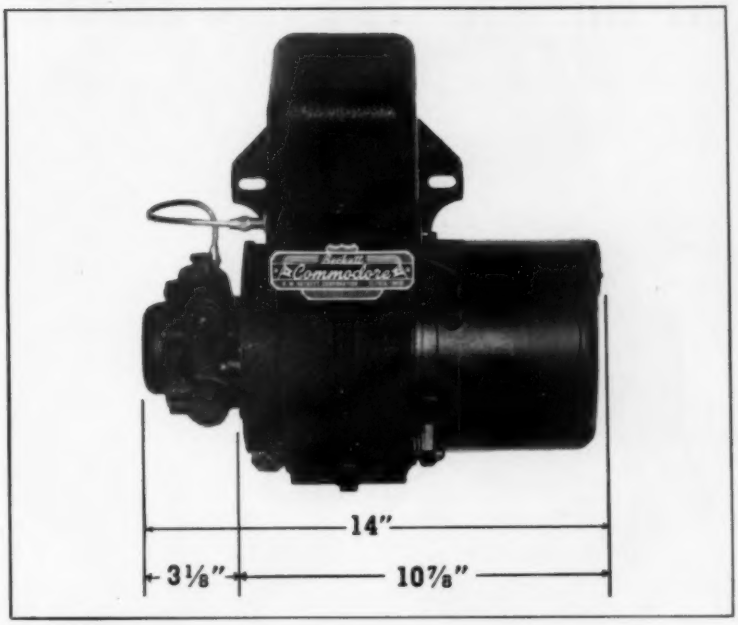

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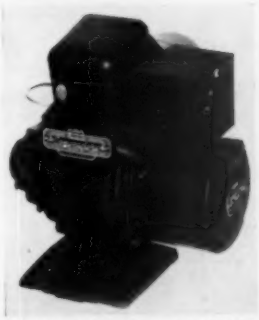

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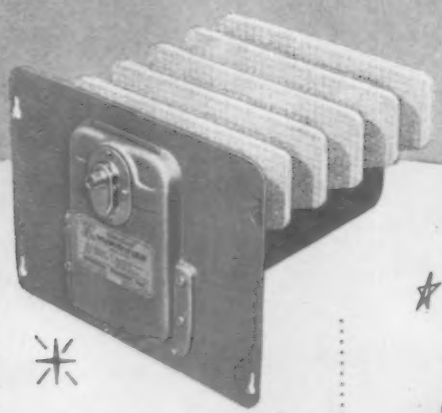

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MERCHANDISING NEWS

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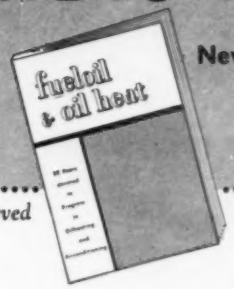

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Monthly oilheating Trends

OILHEATING DEALERS installed approximately 40,411 domestic burners and units in July. This is 19% below last year's 49,299 reflecting principally the sharp drop in new home building this year. Total new home construction in the country is off around 20%, but in the primary oilheating areas—the northern states —it is off 35%.

The July installations were divided: new homes, 9,456; replacements of old oilheating, 14,386; and conversions from other fuels, 16,569. In a few areas of the country the figure on conversions includes changing from space heaters and stoves to central heating where the change would simply be from Kerosene to No. 2 fuel-oil. This is not a major factor, but one worth noting.

For the seven months to the end of July, total installations are estimated at 286,118 which is 4% below last year's 298,573. The seven month's totals were divided: new homes, 92,562 this year against 103,572 last year; replacements show 105,501 compared with 106,388; conversions from other fuels, 88,055 this year, are almost the same as last year's 88,613.

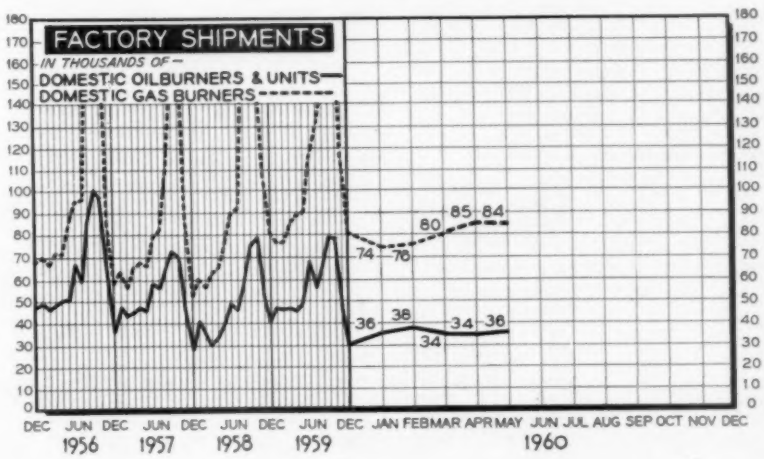
Airconditioning installations by oilheating dealers in July were approximately 4,529. These, of course, were central systems. Not many oil men sell the individual room units since they don't produce any oil business and would be useful only as "get acquainted" items for future oil sales.

Water heater installations by the oilheating group in July are estimated at 2,264—the power burner type.

Oilheating stocks: At the end of July, dealers were holding approximately 58,643 domestic burners and units compared with 50,596 a month earlier and with 82,740 on the same date last year.

Factory stocks at the end of May, the most recent data, were 71,972 compared with 53,836 a year earlier. Factory stocks were above the previous year on a growing scale in each of the first five months.

Tank Stocks: On July 31, dealers were holding an estimated 41,816 customer oil tanks or just a little above the 39,537 on June 30 but well below the 49,925 at the end of July last year.



July Minimum Retail Prices Key Dealers

	July Avg.	June Avg.
Separate Burners	$312	$312
Boiler Burners	744	744
Furnace Burners	625	626

Price Index: Separate Burners 1947-49 is 100%

WHOLESALE			
July	94.9	Six months ago	94.8
June	94.6	Year ago	95.5
RETAIL			
July	90.8	Six months ago	92.0
June	90.9	Year ago	91.7

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than those reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	MAY			FIVE MONTHS		
	1960	1959	Percent Change	1960	1959	Percent Change
Separate Burners	24,797	33,091	—25.1	129,418	159,987	—19.1
Boiler Burners	2,461	3,005	—18.1	13,668	14,230	— 4.0
Furnace Burners	8,785	11,455	—23.3	35,339	50,932	—30.6
All Domestic	36,043	47,551	—24.2	178,425	225,149	—20.8
Commercial	3,060	4,186	—26.9	14,368	15,355	— 6.4
Total	39,103	51,737	—24.4	192,793	240,504	—19.8

How much do automatic deliveries rely on straight degree-day Figures?

THE DEGREE-DAY system for determining individual fueloil requirements is basically simple and decidedly useful in the heavy consuming months of the year. At the same time, quite a percentage of fuel-oil distributors have made modifications either mechanical or otherwise.

The study this month gets some rather general measurements from which later investigations can be undertaken for greater detail.

We first asked the reporting group if they used a straight degree-day system based on 65° without any trimmings or side effects. The first answer is that 63% of the companies do just that. Then we found that 11% of the companies use a simple degree-day system based on 70° rather than 65°. They feel that it gives them more flexibility in unusual weather situations.

A third group of 8% uses the 65° degree-day system, but they embellish it with the help of an instrument that provides an adjustment to the straight degree-days by compensating effects of sun and wind.

The remaining 18% do not use degree-day systems in any form, although it is entirely possible to achieve relatively automatic deliveries by another method.

Next we asked those who use the instruments if they find them effective and the answer was 100% in the affirmative. However, some dealers who do not have them made some negative comments.

Typical of the impressions about the instruments that compensate for sun and wind effect are these:

"We intend to buy such an instrument because we feel that it will fit our business." . . . "The instrument is very effective during the heating season." . . . "Our system adjusts without use of a machine." . . .

"We have given considerable study to instruments for adjustments, but as yet have seen nothing to change our present degree-day operation." . . . "We are thinking of installing one." . . . "We find that we must make additional adjustments for April, May and October." . . .

"It has been difficult to determine any real improvement through the use of the instrument, but in areas not having a U. S. Weather Bureau the result might well be different." . . .

Some dealers told us about using what is essentially a route system, but adjusting it to the general weather conditions, perhaps using a single house in a zone on a degree-day set-up to serve as a guide for the route.

We asked our group what their experience has been with this kind of system, and it was surprising to find that 52% of them have one or more zones that they operate this way. In general, these are the thin areas where they want the truck to catch all the houses on each trip.

Another 6% of the companies say that they regularly operate this way on kerosene routes for space heaters. This is not at all uncommon in the Pacific Northwest where so many homes use stove oil for heating; it also shows up in the Mid-Atlantic and Southern states in smaller cities or rural sections.

The remaining 42% of the companies keep accounts on strict degree-day operations.

Again we have a series of typical comments on this question:

"We have two suburban stove oil routes which, because of geographical conditions, lend themselves well to this type of dispatching." . . . "Zoning is done automatically with our system." . . . "We have three routes, mostly scattered country deliveries with the greatest users on degree-day to determine the delivery date." . . . "We have a route system on accounts outside our normal range." . . . "Each area has its leader on a degree-day basis." . . .

"On country runs (eight to ten miles from our plant) we deliver to all the accounts in the section." . . . "We find route systems impractical except on small kerosene drops." . . . "Kerosene accounts using pot type burners are on routes." . . .

"On kerosene only." . . . "We use a route system in developments where we have all the houses on the same street." . . . "We use a combination degree-day-milk route system on all outer zones." . . . "Out of town deliveries are on a route system." . . . "This method saves time, labor, mileage and maintenance; and is necessary in certain areas." . . .

"This is necessary on some of our commercial accounts." . . . "We use routes in just a few areas when the account lives too far away for normal delivery." . . .

Runouts with both Systems

Automatic delivery systems are designed to prevent runouts, but they do sometimes happen. The reporting group as a whole had runouts last season affecting 1.67% of their total customers. This sounds high on the face of it, but the sectional differences are not too great. New England scored 2.2%; the Mid-Atlantic states, 1.1%; the Midwest had trouble with 2.5% and the Pacific Northwest 1.0%.

Of course, these figures apply to all reporting companies, some not using degree-day systems. When we separate the degree-day companies from the others, we find the national score showing that they allowed 1.46% of customers to run dry; the

non-degree-day companies had 1.81% of customers with dry tanks. Sometimes there were reasons for the runouts such as credit.

Again quite a number of companies do give the customer some special favor or bonus if they let the tank run dry. Typical comments on this point were these:

"I like this idea and we are going to give a bonus this year." . . . "We start the burner free, of course. One season we gave the customer two free steak dinners if we let their oil tank run out." . . . "Most runouts are on 'will call' accounts." . . . "We pay any service call charges." . . .

"Most of our runouts are due to customer owing back bill." . . . "We pay one dollar per degree that the house drops below 70°." . . . "All our runouts seem to be on COD accounts." . . .

"You get no bonus for running out of gas in your car—we give prompt, courteous service and start burner." . . . "Most runouts are at the start of the heating season." . . . "We pay to have the burner started."

We next asked the group of companies if they will accept customers who do not want automatic deliveries, and who insist on ordering oil when they need it. The score on this point was 100% yes.

We do know of a few companies that do refuse non-automatic accounts, but they were not in this reporting group.

Some insist on ordering

Among the degree-day type companies an average of 8.6% of their customers do not want automatic deliveries and insist on ordering each time. Strangely enough, among the companies not using degree-days only 6.5% of these customers watch their own tank and order. This indicates quite clearly that these companies operate automatic deliveries without degree-days, simply on a route system.

In all probability their average drop would be smaller in gallons than the degree-day companies, but they apparently figure it saves them money.

The companies not using degree-days have on the average just under 800 customers while those using degree days have an average of 1993 customers. This is probably the answer. The smaller company can pay closer attention to individual customer requirements and have better luck with a route system.

In the August issue of FUELOIL & OIL HEAT there was an article about an Indianapolis oil company using IBM data processing for its entire system of automatic delivery. We asked our reporting dealers if they had considered data processing of this automatic type, and to our considerable surprise almost a third of the companies have considered it.

Quite obviously this is going to become a factor among the larger fuel-oil distributors though we do not know at what level it will be practical. In the Indianapolis story referred to, the fueloil company serves about 20,000 accounts. Some experiments are under way with having the job done at a data processing center, but it is a little early to know the results.

Oilburner Permits*

JULY 1960		Seven Months 1959	1960
2	Albany, N. Y.	6	7
24	Baltimore, Md.	142	144
38	Bridgeport, Conn.	210	297
2	Columbus, Ohio	48	8
13	Detroit, Mich.	195	153
25	Elizabeth, N. J.	199	163
6	Freeport, New York	82	87
59	Hartford, Conn.	463	277
13	Irvington, N. J.	120	68
32	Meriden, Conn.	208	91
17	Milwaukee, Wis.	147	98
..	Minneapolis, Minn.	125	..
..	Montclair, N. J.	57	..
..	Morristown, N. J.	11	10
23	Mt. Vernon, N. Y.	201	170
..	Newark, N. J.	385	..
23	New Bedford, Mass.	312	352
19	New Haven, Conn.	364	..
12	New Rochelle, N. Y.	24	68
26	Norfolk, Va.	131	174
..	Omaha, Neb.	39	..
4	Orange, N. J.	20	31
5	Passaic, N. J.	32	29
14	Paterson, N. J.	116	..
83	Philadelphia, Pa.**	590	592
39	Portland, Me.	258	224
82	Portland, Ore.	578	523
27	Poughkeepsie, N. Y.	53	72
39	Providence, R. I.	205	202
46	Richmond, Va.	225	336
39	Roanoke, Va.	372	132
24	Rochester, N. Y.	273	231
2	Rockville Centre, N. Y.	20	17
30	Salem, Mass.	153	211
28	St. Louis, Mo.	279	..
..	St. Paul, Minn.	38	35
1	Schenectady, N. Y.	40	34
19	Spokane, Wash.	179	180
47	Springfield, Mass.	364	349
7	Stamford, Conn.	107	58
..	Washington, D. C.	169	..
4	White Plains, N. Y.	78	40
5	Wilmington, Del.	73	106
58	Worcester, Mass.	410	325
..	Yonkers, N. Y.	77	..
..	Matched Totals	6,657	5,894
	Percent Change		—10.3

* Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

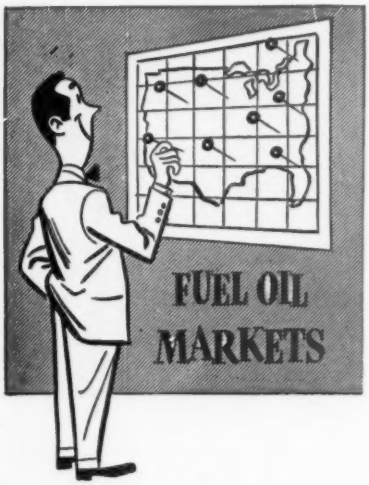
** Courtesy of "Philadelphia Inquirer."

Where is the

New home Market?

	No. of Permits Issued May	5 Mos.
Alabama	1,109	4,540
Arizona	1,875	8,496
Arkansas	277	1,303
California	17,656	85,430
Colorado	1,643	6,366
Connecticut	1,569	6,654
Delaware	204	1,074
District of Columbia	293	1,059
Florida	5,584	30,603
Georgia	2,631	8,921
Idaho	126	540
Illinois	3,789	17,372
Indiana	1,690	5,794
Iowa	606	2,324
Kansas	434	2,323
Kentucky	855	2,911
Louisiana	978	4,417
Maine	197	492
Maryland	2,793	9,396
Massachusetts	1,721	7,218
Michigan	2,798	10,696
Minnesota	1,285	4,385
Mississippi	673	1,864
Missouri	1,248	6,317
Montana	194	551
Nebraska	639	1,920
Nevada	425	2,113
New Hampshire	111	509
New Jersey	2,940	11,136
New Mexico	385	2,110
New York	10,075	29,389
North Carolina	904	4,211
North Dakota	197	500
Ohio	5,168	18,996
Oklahoma	625	3,467
Oregon	1,027	3,683
Pennsylvania	2,720	11,964
Rhode Island	357	1,234
South Carolina	240	1,077
South Dakota	149	478
Tennessee	1,390	6,407
Texas	4,819	24,888
Utah	672	2,591
Vermont	36	99
Virginia	3,016	11,526
Washington	1,703	6,579
West Virginia	176	609
Wisconsin	1,763	6,609
Wyoming	159	602
	39,996	152,697

These figures are collected by the Census Bureau from selected areas. They represent approximately 77% of all dwelling construction in the United States.



THE MIDWEST had quite a number of changes for the price table this month, although the East Coast was quite steady showing only two changes—a .1¢ drop at Philadelphia and a .6¢ drop at Washington both at the tank car level.

In the central states, five of the cities in our regular listing had changes. Detroit was down .5¢ through a summer fill allowance and up .5¢ at the tank wagon level. Minneapolis, Milwaukee and Des Moines saw their wholesale price rise .5¢.

St. Louis and Des Moines went up .5¢ at the retail level. The oddity in the table is a 1.0¢ retail increase at Minneapolis which in turn is offset by voluntary allowance of the same size.

Notice the fuel price index chart for this round. It reflects June as the latest available data supplied by the Bureau of Labor Statistics, Washington. The gas price index blew the lid off, went right through the top line of the chart. If it keeps that up, we are going to have to redraw the chart instead of simply extending it each month.

Now look further down the line and notice that No. 2 fueloil with an index of 126.3 broke through the cost of living index of 126.5. It is not too healthy to have fueloil at levels unattractive to refiners; at the same time our competitive position in relation to other fuels is certainly improving.

The fueloil index is based on a BLS survey from which they determine the average June price level to be 14.73¢.

Interestingly, the fueloil index of 126.3 is lower than gasoline at 134.6 or lube oils at 128.9.

Primary stocks on August 5 were about 7% below the corresponding date last year. This is a healthy situation for price stability which is expected to be considerably better than that of last winter. There is one exception . . . the Midwest where stocks are just a little higher.

To understand this apparent lesser concern for the industry's surplus problems it is necessary to notice that the large bulk of smaller refiners sell their product in the central states. They, in general, feel that they can have very little individual bearing on the national market so they have less reason to adjust their yields to the demands of the industry as a whole.

Distillate Fueloils

PRIMARY STOCKS*
(Thousands of Barrels)
East of Rockies

	Aug. 5 1960	Aug. 7 1959
East Coast	51,022	56,523
Midwest	42,105	41,585
Gulf Coast	24,369	28.106
Total	117,496	126,214

* American Petroleum Institute.

No. 2 Heating Oil
(Including No. 3 & PS200)

Price per gallon as of August 10, 1960

	Tank Car**	Tank Wagon
Portland, Me.	9.4	14.1
Boston	9.3	13.9
Providence	9.3	13.6
Hartford	9.5†	13.9
New Haven	9.2	13.8
Syracuse	10.5	14.3
Albany	9.4	13.3
New York	9.2	13.3
Newark	9.2	13.2
Philadelphia	9.2	13.3
Baltimore	9.2	13.5
Wilmington, N. C.	9.8	13.4
Washington	9.2	13.8
Richmond	10.1	13.5
Charleston, S. C.	9.8	13.5
Chicago	9.5*	13.6
Detroit	†10.5*	15.6
Cleveland	11.2*	15.6
Minneapolis	9.929	15.2‡
St. Louis	9.35*	14.9
Indianapolis	9.89*	14.2
Milwaukee	9.735*	13.4
Des Moines	10.6	14.3
San Francisco	12.05*	14.8
Portland, Ore.	10.825*	15.1
Seattle	10.6*	15.2
Spokane	12.6*	16.8
Los Angeles	11.55*	14.3

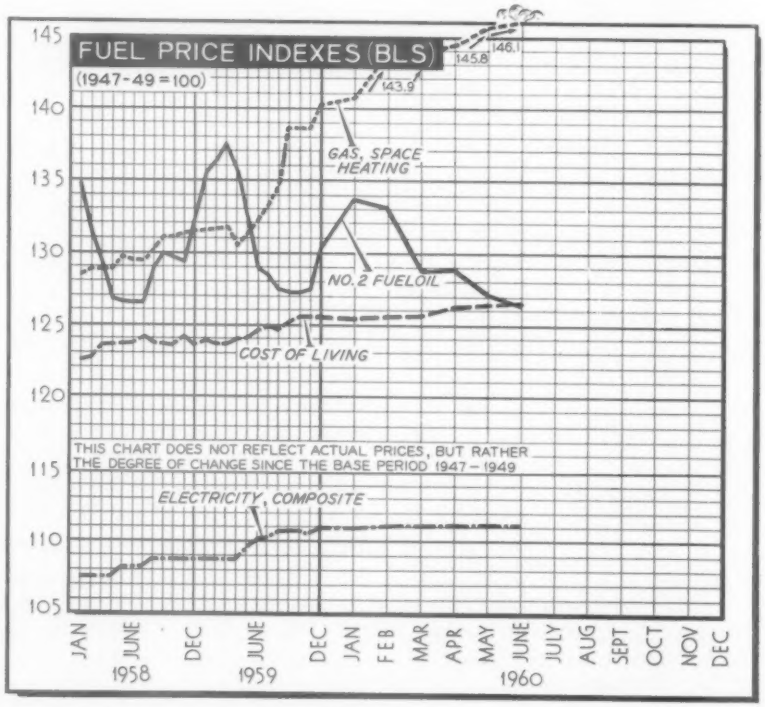
Tank wagon prices shown are for maximum one-time delivery discounts.

* Delivered.

** Tank car prices are typically those paid by fueloil distributors as a purchase price. On the West Coast, this term more often indicates a retail sale to a large commercial account. This usually is a half cent below tank wagon price.

† Summer fill allowance of 0.5¢ applicable.

‡ Voluntary allowance of 1.0¢ applicable.



OUT IN ONE...

Sometimes you have to blast a little to get on the green stuff. That goes for golf — or making a dollar in today's competitive fuel oil business. If you aim to come in with scores you're proud of, season after season, you'll find HARTOL is a real "money player" to have on your side. For over three decades HARTOL has provided "pro" independents with 17 convenient terminals, storage for peak operation, and dependability under all conditions. Make it a point to talk it over with your HARTOL representative. He's at your service 100%.

- Largest independent marketer of gasoline and fuel oil on the Eastern Seaboard.
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Oil Burner Transformers

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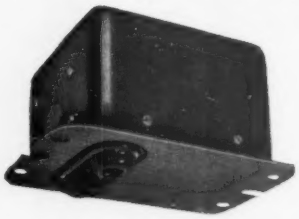

Dongan Ignition Transformers are standard equipment on leading makes of oil burners. They are fully guaranteed. Available in many sizes—both domestic and industrial. Approved by U. L. and C. S. A. They offer you these outstanding features: High voltage windings (5,000 to 20,000 volts); cool centers; no radio or TV interference; custom design. Just send us a blueprint of the type of mounting you need!

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You'll like the convenience of Dongan's new test unit. It includes a high voltage potential transformer; a voltmeter; a pair of high tension test leads for connecting to secondary terminals of the transformer you're testing; and a pair of primary leads to connect the transformer to current supply. For bench or field work, this versatile tester is easily portable — weighs just 15 pounds. *Write for prices.*

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The Dongan Line Since 1909

DONGAN ELECTRIC MANUFACTURING CO.

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Names in the News

William W. Bryan has been appointed to succeed O. V. Tracy, who retired on August 1, as president of the Esso Standard Division, Humble Oil & Refining Co., New York, N. Y.,

Bryan Tracy

it was announced. Bryan, who began his career with Esso in 1924, has been serving in Houston as vice-president for marketing on Humble's headquarters staff. The naming of *Charles W. Bohmer* as assistant for marketing to D. W. Ramsey, Jr., Humble vice-president and director for marketing was also announced.

R. P. Stuntz has been appointed manager of field sales, Babcock & Wilcox Refractories Division, New York, N. Y. Stuntz will assume direction of the division's district sales personnel, agents, distributors and dealers. *L. D. Christie* has also been named product manager, technical sales, it was announced. Christie will program and direct field testing and evaluation of new products and provide technical services to field sales personnel.

Ralph J. Link has been named director of National Services, Chrysler Airtemp, Dayton, Ohio, it was announced. In his new post Link will help tighten the bonds between the sales and service departments. *William L. Regan* will succeed Link as sales manager for the Packaged Heating and Cooling Department.

Dr. Van W. Bearinger has been appointed director of research for Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. He will supervise the expanding activities of Honeywell's Research Center in Minneapolis, where nearly 200 scientists and specialists conduct work in all of the physical sciences. *Dr. John N. Dempsey* and *Edward E. Rexer* have been named assistant directors.

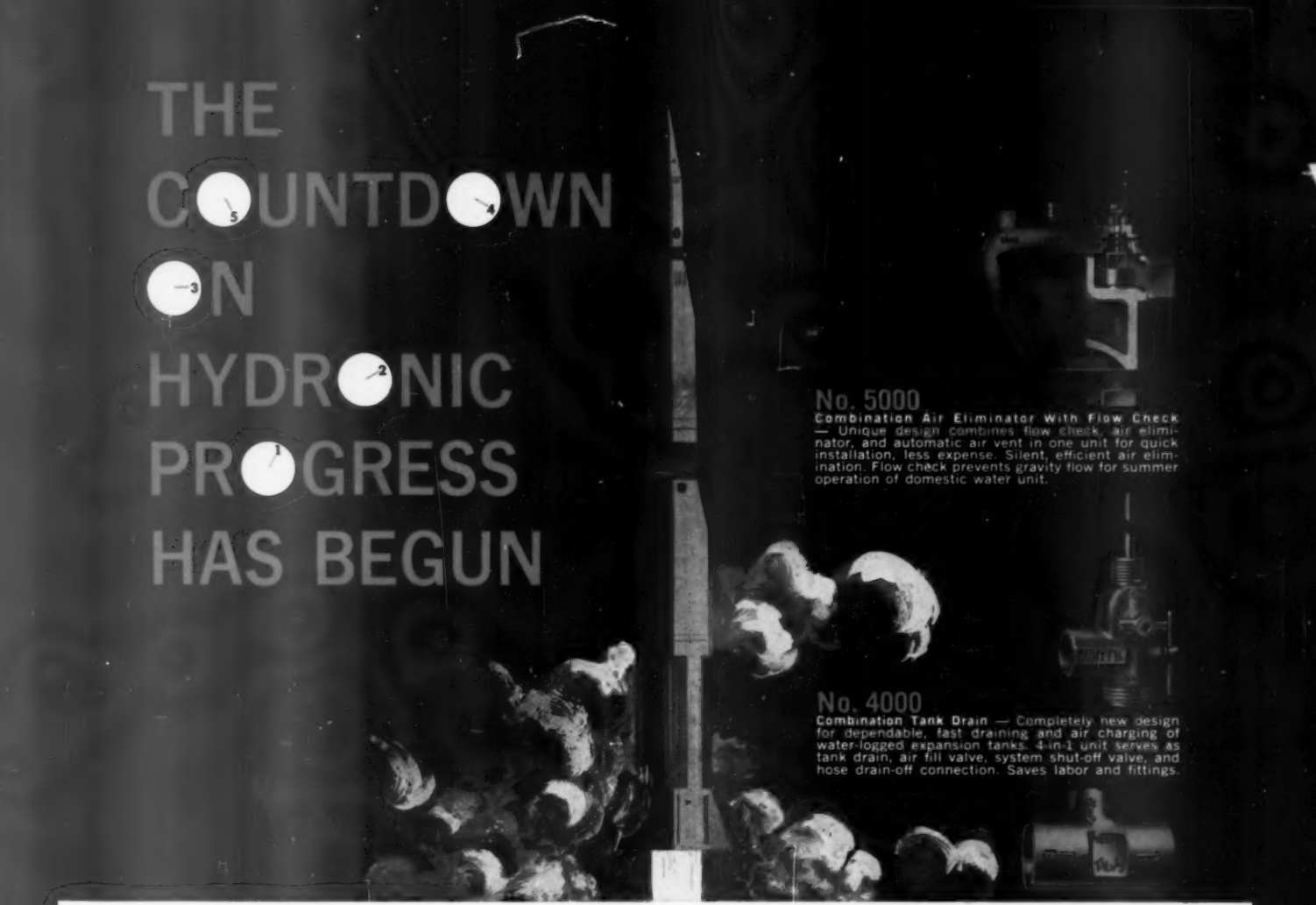
Richard L. Heckman has been named advanced planning specialist, Appliance Control Department, General Electric, Schenectady, N. Y. Heckman's newly-created position is designed to assure that the department will have available products with advanced concepts to meet the appliance industry's future needs for controls. The appointment of *Malcolm G. Doyle* as product planner for appliance, heating and special purpose controls has also been announced. Doyle will be responsible for short-range planning to meet current needs.

Charles H. Downey has been appointed vice-president in charge of sales, Associated Terminal Corp., Watertown, Massachusetts, it was announced. Downey has the responsibility for Winkler merchandising program in eastern Massachusetts.

Harold T. Helle, owner and manager of T. G. Helle Co., St. Paul, Minn., died recently in Duluth where he was vacationing. Survivors include his wife, Esther, his stepmother and a sister, Mrs. Harold Lieske.

Frank Sinning, manager, Industrial Oilburner Division, Allied Oil Co., Cleveland, died of a heart attack at his Cleveland home on August 5. He had been married to the former Marie Leahy, who died two years ago. Sinning was 62 years of age and had retired from active business on August 1. Prior to 1946 he had been sales manager for the B. F. Goodrich Co. in Buffalo, Toledo and Cleveland.

THE COUNTDOWN ON HYDRONIC PROGRESS HAS BEGUN



No. 5000
Combination Air Eliminator With Flow Check — Unique design combines flow check, air eliminator, and automatic air vent in one unit for quick installation, less expense. Silent, efficient air elimination. Flow check prevents gravity flow for summer operation of domestic water unit.

No. 4000
Combination Tank Drain — Completely new design for dependable, fast draining and air charging of water-logged expansion tanks. 4-in-1 unit serves as tank drain, air fill valve, system shut-off valve, and hose drain-off connection. Saves labor and fittings.

Heating contractors wanted improved, engineered hydronic accessories to satisfy their customers' demands . . . and to keep pace with the growing market for forced circulation hot water heat. Watts hydronic specialties are the answer. We confidently predict they will set new industry standards for design and engineering.

These new Watts products improve water circulation and reduce installation time, costs and inventory. Watts equips you with a complete, dependable line, to save you time and money now and to prevent trouble later.

You can install them on even the most competitive job (they cost no more) and protect your reputation, your customers' comfort and safety. Contact your wholesaler or write us for bulletin. *Watts Regulator Company, Lawrence, Mass.*

Be sure . . . Use

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No. 3000
Radiator Diversion Fittings — Precision machined for forced circulation heating systems to insure maximum diversion of water into each unit with minimum pressure drop. All-bronze (85% copper) construction for quick-tight sweating and corrosion resistance.

No. 2000
Two-Way Flow Check — Combines angle and horizontal checks in one stock type: free air flow expansion tank connection when installed as angle check; uses boiler by-pass and recirculation line when installed horizontally. Easily opened for gravity circulation when necessary.

No. 1000
Circulator — Exclusive, compact design offers quietest performance, minimum maintenance. Impeller attached directly to motor shaft means fewer parts to wear and replace. Hydronic performance curve assures flow design standards for modern piping. Compact unit has fewer parts, weights less, and takes less space.

NO LOST TIME WITH SPEED-KLEEN CAPS

FROZEN SOLIDLY THEY LIFT OUT QUICKLY!

DELIVER MORE OIL WITH LESS WORK

MAKE MORE PROFIT ON EVERY GALLON

FREEZE PROOF SELF EJECTING CAPS LIFT OFF EASILY—QUICKLY.

For easier, cleaner, faster fills—at any pumping speed—there isn't anything that will help your delivery man as much as a Speed-Kleen nozzle tube and fill pipe fittings. Make his job easier and also save on delivery costs—as much as $5.00 per customer per year—by simply replacing present fill pipe caps with Speed-Kleen fittings.

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140 W. Market St., York, Pa.

James A. Bradley has been appointed sales representative for the C. A. Olsen Mfg. Co., Elyria, Ohio. Bradley will represent Olsen in the states of Florida, Georgia and Alabama. *Stephen J. Cheney* will represent Olsen in the New England states. He succeeds *John P. Cullin* who continues to represent Olsen in New York State.

Bradley Cheney

Eugene Parsons has been appointed district manager of all divisions, Pullman Vacuum Cleaner Corp., Boston. He will direct sales in Alabama, Tennessee, Kentucky, Mississippi and the Florida panhandle for all Pullman products, including the "Never Clog" boiler and furnace cleaner.

S. C. Deitrick has been appointed sales training director for Westinghouse Electric Corporation's airconditioning division, Staunton, Va. Deitrick will be responsible for training the division's distributors in the application, installation, operation and maintenance of the company's airconditioning equipment.

Aden P. Williams, Jr., has succeeded *Harold T. Cruickshank* as reseller sales manager, Esso Standard. Williams had been a vice president and director of Penola Oil Co., an Esso affiliate. Cruickshank recently moved to Jersey Standard as manager of marketing development.

S. J. Toth and *F. C. Brandt* have been appointed sales managers in the International Division, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Toth will direct foreign sales of residential heating and airconditioning controls and Brandt will be responsible for commercial heating-cooling controls.

Hagle Sales, Inc., Winter Park, Fla., has been named manufacturers representative for Radiant Utilities Corp., Brooklyn, N. Y., handling in the State of Florida the Radiant line, including high and low pressure oilburners, Shell Head burners, oilfired water heaters.

James A. Kozel has been named manager of product engineering, American-Standard, Detroit Controls Division, Detroit, Michigan. Kozel will be responsible for all products in the appliance, heating, air conditioning, refrigeration, industrial and thermo-controlled actuator fields.

Arthur Noll, Sioux Falls, S. D., has been appointed sales representative for the South Dakota area by Mueller Climatrol, Milwaukee, Wis., handling its line of residential and light commercial heating and airconditioning equipment.

Riverview Supply Co., Cape Girardeau, Mo., has been appointed meter sales representatives for the Ralph N. Brodie Co., San Leandro, Calif. Riverview will represent the company in many counties both in Missouri and in Illinois.

Jim Hughes has been appointed sales manager of the Ohio Furnace Co., Columbus, Ohio. Ohio Furnace is the exclusive distributor for both Armstrong and General Electric heating and airconditioning equipment. The firm serves 45 counties in Ohio and West Virginia.

James E. Kuppe has been made manager, residential climate changer sales, Trane Co., La Crosse, Wis.

H. R. Pataky Sales Agency, Lima, Ohio, has been appointed sales representative for the state of Ohio by Automatic Humidifier Company.

Kendall Fiske and *Richard K. Burgess* have been made district sales managers, Taco Heaters, Inc., Cranston, R. I. Fiske will handle the Chicago district where he was previously a Taco sales engineer; and Burgess will head the Philadelphia territory.

the meter that can't register air!

1. When air is present in the pumping system, the LC Air Eliminator discharges directly to . . .

2. . . . underside of piston in LC Check Valve. This forces piston upward to stop flow positively and immediately.

LC ENABLES FUEL OIL DEALERS TO DELIVER *HONEST* VOLUME

Here's the sure, simple solution to today's honest-volume dilemma—accurate, compact LC Meters with the check valve that closes with positive action the instant intake line contains air.

LC Meters not only pass the "split compartment" test with accuracy meeting regulations in National Bureau of Standards Handbook 44, but they weigh less, take less space, and operate without metal-to-metal contact in the metering elements for long life and new minimum maintenance.

If your LC Meters now have an elbow, the check valve merely replaces it. Cost, furnished separately or installed before shipment, is less than 10% of complete-meter price.

Get full facts now on LC Meters and their many exclusive, superior features. Find out how really good and reliable meters can be . . .

Phone or Write for Literature

The LC Check Valve operates only and always when air is present—regardless of:

LINE PRESSURE

RATE OF FLOW

NOZZLE OPENING

TYPE OF PUMP

PUMP EFFICIENCY

PUMP SPEED

Automatic recovery. No adjustment to encourage tampering. No more pressure-loss, when open, than the elbow it replaces. Adds only one moving part. Takes no extra space. Patented.

LIQUID LC CONTROLS

NOW SHIPPED FROM STOCK
—100 gpm, 350 gpm, and 600 gpm sizes.

LIQUID CONTROLS CORPORATION
Commonwealth Avenue, North Chicago, Illinois
Phone: DExter 6-8070

fueloil & oilheat

AIR IS THE VILLAIN!

in hot water heating or chilled water cooling systems

MAID-O'-MIST

Automatic AUTO-VENTS

CONTINUOUS VENTING ACTION
ENDS CIRCULATION WORRIES!

No. 7 AUTO-VENT®

No wonder Number 7 is a big favorite with both heating and air-conditioning experts! Fully automatic, this brass vent has a self-closing, float operated valve — all mounted on a removable bonnet for quick servicing. Small (4⅜" x 2¼" with ⅛" I.P. female connection) it does a big job of eliminating air. For pressure up to 75 lbs.

Float Type

Float Type

AUTO-VENT No. 67

Is the space limited? Then No. 67 is your Auto-Vent! Its overall size is only 3 3/16" x 1½" with ⅛" I.P. male connection. Takes 30 lb. pressure.

No. 72 AUTO-VENT

A fast-venting valve of the expansion type for convectors, baseboard and free-standing radiation. For vertical or horizontal mounting. Size 1½" x ½" with ⅛" I.P. male connection. Disc dries quickly because of immediate drainage.

Float Type

No. 27 AUTO-VENT

Smaller sized (3" x 2½") for horizontal mounting with ⅛" I.P. female side connection. Use on convectors, radiant coils, etc. Takes up to 50 lb. pressure.

No. 37 AUTO-VENT

Similar to No. 27, but designed for horizontal mounting with ⅛" I.P. vertical male bottom connection. Size 3" x 2½". 50 lb. pressure.

Float Type

Get full information from your jobber or write for catalog, today!

MAID-O-MIST Inc.

MAID-O'-MIST, Inc.

3217 NORTH PULASKI ROAD · CHICAGO 41, ILL.

Becker Marsden Co. occupies new Building in St. Louis

BECKER MARSDEN CO., long established and well-known fueloil and oilheating dealer in St. Louis, Mo., has moved into a new building at 569 Melville Ave.

A. Jack Becker, principal in the business as well as chairman of the Fuel Oil Committee, American Petroleum Institute, expects a principal advantage of the move to be the placement of all personnel on one floor in a fireproof structure.

Gulf moves Headquarters of Marketing to Houston

THE U. S. MARKETING headquarters of Gulf Oil Corporation will be transferred from Pittsburgh to Houston, Texas, about September 1, as part of an extensive departmental reorganization. The move is designed to provide better service to customers and promote greater efficiency of over-all operation and closer coordination with Gulf's domestic production, manufacturing and supply departments which already have been established in Houston.

The new marketing organization establishes four new regions headed by recently elected vice-presidents. It realigns divisions under each with new distribution boundaries which are more realistic in conjunction with sales and shifts more management responsibility to point-of-sale levels.

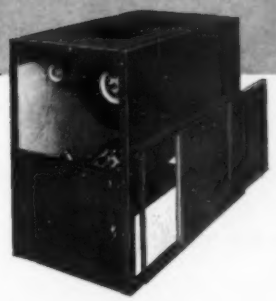
J. L. Lenker, Gulf's vice-president for the U. S., will lead the new marketing team directly assisted by four regional vice-presidents. The latter are: J. B. Kelley, eastern regional marketing vice-president, located in Philadelphia, Pa.; G. E. Millican, southern regional marketing vice-president, located in Atlanta, Ga.; W. A. Bourne, midwestern regional marketing vice-president, located in Toledo, Ohio; and B. B. Pettit, southwestern regional marketing vice-president, lo-

Lenker

trend-setting COOLING UNITS

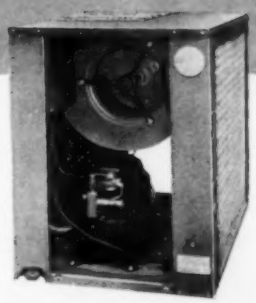
New 2 and 4 Ton Condensing Units Top-mounted condenser coil reduces air noise to a minimum. Constructed for unsheltered outdoor installation. Peak performance.

Round, Plenum-Type Evaporator Coil Provides more cooling surface in less space. Improved, vertical condensate drainage.



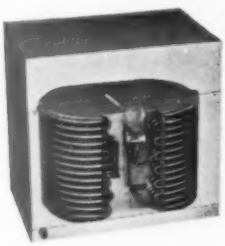
New 3, 4 and 5 Ton Blower-Coil Units Designed for horizontal or vertical discharge. Accessory Discharge and Intake Plenum-Grilles available. (Shown vertical with side air intake.)

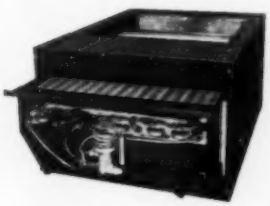
Flat, Duct-Type Evaporator Coil Housed in heavy-gauge enameled cabinet. Built-in drainage pan.



3 and 5 Ton Condensing Units Centrifugal Blower for ducted installation. Constructed for unsheltered outdoor installation. Peak performance.

Counterflow Evaporator Coil Readily slides into heavy-gauge cabinet. Zinc-coated drainage trays trap condensate.





PLUS matched-performance Furnaces

Gas and Oil Winter A. C. Units . . . Plenum Type Evaporators.

Gas and Oil Counterflow Units . . . Counterflow Evaporators.

Gas and Oil Horizontal Furnaces . . . Duct Type Evaporators.

Gas or Oil Basement A. C. Units . . . Plenum Type Evaporators.

Gas or Oil Combination Year 'Round A. C. Units . . . Air or Water Cooled

Front-runner with a complete line of 2, 3, 4 and 5 Ton Air Cooled Summer Air Conditioning Units, Moncrief has set a new trend by providing excellence at low prices.

Uncomplicated Moncrief Condensing Units house the heavy-duty compressor, large-area condenser coil and powerful fan in a ruggedly weatherproofed cabinet of 16-gauge, zinc-coated steel. Unlimited accessibility to service valves and electrical parts makes installation and maintenance easy and convenient.

With a choice of Plenum, Duct or Counterflow Evaporator Coils —plus, new 3, 4 and 5 Ton Blower Coil Units that can be installed for either horizontal or vertical discharge and end, bottom or side intake — you are equipped for practically any application.

In addition, Moncrief Winter Air Conditioning Furnaces are furnished with large-capacity blowers as standard equipment, so that you have maximum air deliveries at minimum expense — plus, the trouble-free heating performance for which Moncrief Furnaces are famous.

At Moncrief's competitive prices, these advantages add up to increased profits without the disadvantage of a large inventory, because your Moncrief Wholesaler carries your stock for you. Call him, now.

MONCRIEF

THE HENRY FURNACE COMPANY · MEDINA, OHIO

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

Ohio's largest air conditioning than 200 JOBS FROM FRAM® permachem-

This return card brought in more than 200 service jobs...

Proof you can boost service business with amazing FRAM Filters that kill 99+% of germs trapped!

Early this Spring, Quiggin & Son, Cleveland heating and cooling service contractors, decided to handle FRAM permachem-treated Air Filters *exclusively*.

Owner Raymond Quiggin felt FRAM Filters could do an outstanding job for his customers. What's more, he appreciated the fact that FRAM Filters were not being carried in discount houses. But most of all, Mr. Quiggin chose FRAM Filters because he saw great promotional advantages in handling the air filter that kills 99+% of germs trapped!

To prove it, Mr. Quiggin selected 5000 names in the Cleveland area for a return-card mailing. He offered a free FRAM permachem-treated Air Filter with every window-type air conditioner cleaned and checked.

Result of this mailing: more than 200 service jobs!

Mr. Quiggin reports: "We feel that the FRAM Filter helped make the program a success."

You can boost *your* service business by installing and promoting FRAM permachem-treated Air Filters. Only FRAM Filters offer your customers all these benefits...

- Kill 99+% of bacteria, mold, mildew trapped in the filter!
- Keep air *hospital-clean!*
- Trap dust, dirt, pollen!
- Stop musty filter odors!
- Need no oil!
- Exclusive anchor-locked frame cannot settle, vibrate, blow or soak loose!

You can't miss with FRAM permachem-treated Air Filters. Write FRAM today for the full story.

service contractor gets more ONE MAILING featuring treated Air Filters!

FREE FRAM PERMACHEM TREATED AIR FILTER!
with each window unit cleaned and checked within 30 days of this offer.
FRAM PERMACHEM TREATED AIR FILTERS KILL 99+% OF THE GERMS TRAPPED IN THE FILTER
HOSPITALS USE THEM!
• Tests revealed that air filter killed 82% of airborne bacteria.
• Eliminates mold and mildew growth on the filter.
• Traps pollen and reduces nasal irritations.
SPECIAL WINDOW UNIT CLEAN, CHECK & TUNE-UP, ONLY
SPECIAL PRICE FOR MULTIPLE UNITS
$7.50 including free filter
QUIGGIN & SON INC.
DETACH AND MAIL TODAY
EAST SIDE
EV 1-3700
1812 GREEN RD.
WEST SIDE
ED 3-8660
19303 LORAIN RD.

Raymond Quiggin, Sr. (right) and Jr., owners of Quiggin & Son

Now! Boost your sales with New FRAM Merchandising Program for motels and hotels

1. Colorful metal outdoor sign

3. Room cards

2. Lobby plaque

4. Plus a complete selling presentation

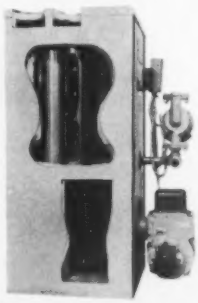
Guaranteed by Good Housekeeping

FRAM *Aire Corporation*
Division of FRAM Corporation, Providence 16, R. I.

fuel oil & oil heat

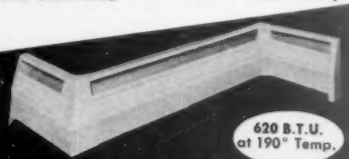
YOUR BEST BUY IS
CROWN
"For the Hottest Heat in Town"

BOILER BURNER UNITS



7 SIZES — 480' to 1830' Completely wired and assembled

FEATURING:
• Minneapolis Honeywell
• Bell and Gossett Pump



620 B.T.U. at 190° Temp.

BASEBOARD RADIATION
Finished in Deluxe White

PKGD. 2 WAYS
1. Economy 8' Lengths
2. Pre-Pak — 3'-4'-5'-8' — no cutting

I.B.R. RATED

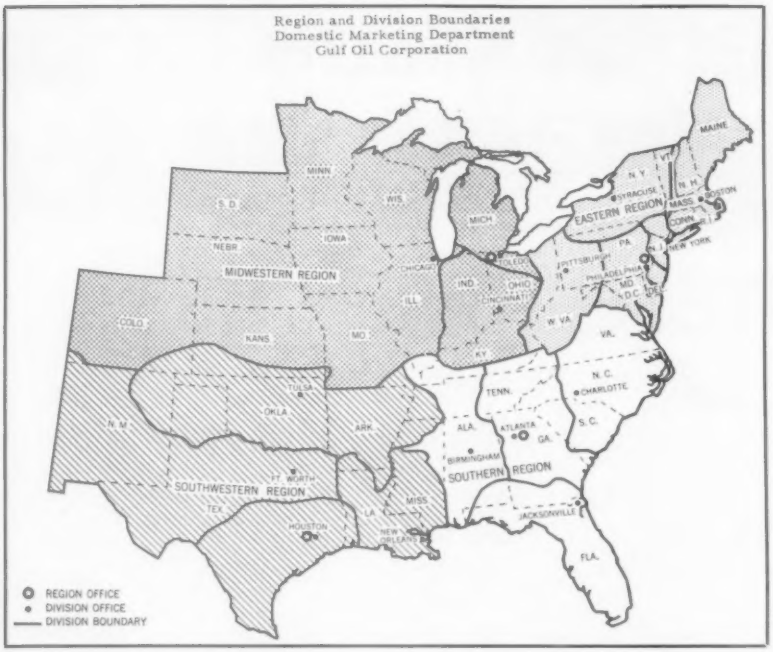
OIL FIRED WATER HEATERS
Glass Lined

3 sizes
• 30 GALLON
• 50 GALLON
• 70 GALLON

For The Hottest Price in Town, Write:

CROWN
HOME EQUIPMENT CO.
(Div. of Crown Industries)
1410 N. Delaware Ave., Phila. 25, Pa.

NOTE: SOME TERRITORIES STILL OPEN FOR AGENTS



cated in Houston, Tex.

Mr. Lenker and the four new vice-presidents will direct and coordinate all marketing in the company's 38-state and District of Columbia marketing territory.

Lenker said the reorganization of Gulf's domestic marketing department has been underway for some time as part of a wide decentralization program in all departments begun some six or seven years ago.

OHI's year-long Celebration climaxes during Week of Oct. 9

NATIONAL OIL HEAT Diamond Jubilee Week from October 9 to 15 will climax the year-long celebration sponsored by the Oil-Heat Institute of America, featuring oil as "The jet age Fuel."

During the Week it is expected that a number of governors and mayors will issue official proclamations for their respective states and cities; already the six New England governors have issued such proclamations.

Many regional and local affairs will take place. Prominent among these is a luncheon in New York City, to be held under the auspices of OHI. Probably the highpoint of the celebration will be reached in late October when the S. S. Queen of Bermuda sails from New York with a large party of industry people aboard for the Oil Heat Diamond Jubilee Cruise to Bermuda, which will include an OHI management conference and board meetings.

Everett Elliott, vice-president of OHI, is national chairman of the year-long celebration, which began in January with a press reception in New York City. This was followed by an affair in Boston, OHI's convention and exposition, plus other industry observances, notably those sponsored by the Oil Heat Council of Western Massachusetts and the Iowa Independent Oil Jobbers Association.

A special kit has been prepared to aid local groups in their observance of the Week. The kit contains a number of suggestions, sample proclamation, logotypes, a sample newspaper oil heat supplement, usable in whole or in part as a special section in daily or weekly newspapers. The kits are available from the Oil Heat Industry News Bureau, 914 North Charles St., Baltimore 1, Md., the agency which handles public information and promotion activities for the Institute.

GF all-copper type Extra heating efficiency through integral-finned copper tubing. All-copper construction most rugged available. Full thickness fiberglass insulation for minimum heat loss. Complete size range from 4 to 25 gpm. Heavy wrench-sized bosses speed installation. Attractive blue hammertone exterior finish.

GF Tankless Water Heaters put more profit in new installations and conversions

Save time, work and space . . . install a compact, easy-to-handle GENERAL Tankless Water Heater. Many types and sizes . . . domestic or commercial . . . for steam or hot water systems. Instantaneous, plentiful supply of rustfree hot water assured . . . seamless copper tubing used throughout. Modern, efficient designs provide rugged, dependable, economical performance . . . eliminate costly callbacks!

Tankless Jobs pay off!

GF vertical coil-type Compact, rugged cast-iron shell . . . integral finned copper tubing . . . in 4 gpm and 6 gpm sizes.

GF horizontal coil-type Horizontal coils in cast-iron shell . . . integral finned copper tubing . . . in 4 gpm to 20 gpm sizes.

GF indirect type... storage type heater providing maximum heat transfer . . . minimum flow restriction. Cast-iron shell . . . multiple copper coils, easy to clean. Two sizes.

GF boiler unit Built-in units . . . high-efficiency, high heat transfer. Variety of designs and sizes to fit most makes of boilers.

For more profits, check the broad GF line of high-efficiency heaters. Request Catalog 22 for detailed information.

GENERAL FITTINGS COMPANY

EAST GREENWICH, RHODE ISLAND

fueloil & oilheat

*TRADE IN YOUR OLD VOLTAGE TESTER!

READ

voltage and amperage in a snap!

A voltage "indication" doesn't give you all the information you need to do a job right. You want a precise voltage *reading*, measured on a calibrated scale... and you get it with the AMPROBE JR. But sometimes voltage is only half the story. Most jobs require an accurate *current* reading too. The pocket-size AMPROBE JR. provides it—in a snap—*without* interrupting service! Why settle for anything less?

*SPECIAL OFFER

Trade up to an AMPROBE JR. *now*. For a limited time only, we'll give you a sturdy leather case plus the AMPROBE ENERGIZER (to multiply the JR.'s sensitivity *ten times*)—an *$8 value*—for *only $1* and your obsolete voltage tester! The leads come with the JR. Snap up this offer today—at your distributor.

Amprobe Jr.
snap-around volt-amp. tester
$19.85

PYRAMID INSTRUMENT CORPORATION, LYNBROOK, NEW YORK
Serving the Electrical Testing Needs of Industry

High school Students to be at airconditioning Forum

LATE DECEMBER 1960 has been selected as the date for an airconditioning and refrigeration career institute to be held for high school students at California State Polytechnic College's San Luis Obispo campus.

Financed by a $2,000 grant from the Western Air Conditioning Industries Association, at least 40 California high school juniors or seniors who stand high scholastically will be invited to the two-day program. Each will receive a $50 honorarium; students will be selected by a College faculty committee.

William P. Tennity, Association president, explains that since airconditioning is one of the West's fastest growing career fields, "In association with Cal Poly, which conducts the only college-level airconditioning and refrigeration engineering program west of the Mississippi, we plan to follow a broad professional approach which emphasizes the scientific, sociological, mathematical, personal, as well as the mechanical requirements and opportunities in the industry."

State Breakdown issued for gas central Heating

A BREAKDOWN showing the estimated distribution by states of gas-fired central heating installations has been prepared by GAS HEAT and *Comfort Cooling* magazine. It shows that as of January 1, 1960 there were an estimated 11,906,300 gas central heating installations in use, an increase of about 10% over the 10,798,100 reported in use on January 1, 1959.

The increase was based upon sales during 1959 of 1,320,440, a total which was 14% higher than the 1,159,450 gas heating units sold the previous year. Sales during 1959 were broken down: Gas furnaces, 1,036,700 up 18%; gas boilers, 131,940, up 3% and gas conversion burners, 151,800, a decrease of about 2%.

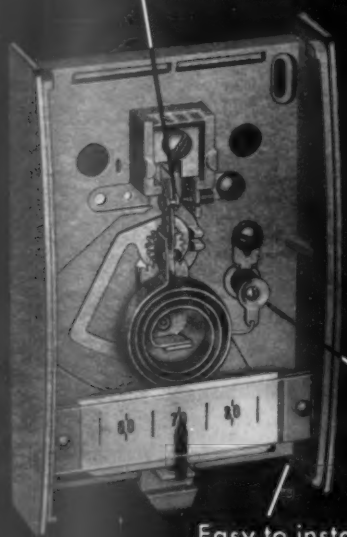
Gas units in operation on January 1, 1960 were divided: Gas furnaces, 7,828,400, up 13%; gas boilers, 1,111,400, an increase of 11% and gas conversion burners, 2,966,500, or

TRY this new Penn thermostat on your next heating job...your customers will like the way it holds room temperature within a fraction of a degree of selected level...it's the kind of comfort people have learned to expect from Penn thermostats!

Easy-to-read thermometer.

Trim, thin-line design styled in neutral beige and brown to harmonize with any interior decor.

Positive, snap-acting contacts . . . no chattering . . . no "on-off" operation when vibration occurs.



Simple, ring-type heat anticipator.

Slide-set temperature dial is easy to set and read.

Easy to install . . . no mounting bracket needed . . . no leveling.

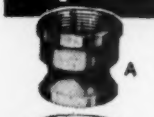
PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Here's proof
Superior quality forged body —precision machined
Uniform wall thickness —no weak spots
Extra heavy reinforcing rim
Larger diameter cam ears for longer service life
Extra Hi-Strength forged handles —greater economy
Stainless Steel pins —greater safety and longer service
Uniform heavy wall thickness —no weak spots
Recess retains gasket in coupler and assures proper placement
Superior quality forged body —precision machined —accurate tolerances

your best buy is EVER-TITE -the best quality quick couplings



Adapter and Coupler

Bronze
Aluminum
Stainless
Carbon
Malleable
Hastelloy

You save time and money when you use EVER-TITE COUPLINGS, because you get speedy deliveries—no leaks.

The tightness is predetermined in manufacture so you can be *sure* with EVER-TITE.

The EVER-TITE trademark is a hallmark of dependability. EVER-TITES do the best job in the transfer of every type of product through hose or pipe.

Get EVER-TITE and get the *best*. Ask your distributor now.

EVER-TITE Adapter and Coupler

EVER-TITE Shank Hose Coupling

Dust Plug

Every EVER-TITE saves time and money

Dust Cap

EVER-TITE Dust Protectors

EVER-TITE COUPLING CO. INC.
254 West 54th Street
New York 19, N. Y.

about 4% more than were operating a year earlier. Gas furnaces represented 66% of the total in use on the first of this year; gas boilers accounted for 9% and gas conversion burners for the remaining 25%.

Gas Units Operating January 1, 1960

	Gas Furnaces	*Gas Boilers*	*Gas Conversion Burners*	*Total In Use*
Maine	2,790	410	1,020	4,220
New Hampshire	5,300	875	2,370	8,545
Vermont	1,725	130	240	2,095
Massachusetts	67,010	34,480	60,290	161,780
Rhode Island	8,390	2,935	8,115	19,440
Connecticut	22,975	13,405	16,665	53,045
NEW ENGLAND	108,190	52,235	88,700	249,125
New York	457,500	144,795	337,565	939,860
New Jersey	196,960	113,575	74,980	385,515
Pennsylvania	572,030	173,870	161,845	907,745
MIDDLE ATLANTIC	1,226,490	432,240	574,390	2,233,120
Delaware	15,075	2,275	1,150	18,500
Maryland	151,360	25,900	33,375	210,635
District of Columbia	69,310	17,915	10,670	97,895
Virginia	79,545	22,385	16,185	118,115
West Virginia	61,995	6,070	19,210	87,275
North Carolina	38,770	3,390	5,835	47,995
South Carolina	12,920	820	1,920	15,660
Georgia	131,775	8,375	25,580	165,730
Florida	62,605	1,885	5,715	70,205
SOUTH ATLANTIC	623,355	89,015	119,640	832,010
Ohio	829,330	76,115	338,915	1,244,360
Indiana	207,730	22,870	135,620	366,220
Illinois	493,620	94,335	397,340	985,295
Michigan	324,805	42,490	311,185	678,480
Wisconsin	185,415	18,010	73,900	277,325
E. NO. CENTRAL	2,040,900	253,820	1,256,960	3,551,680
Kentucky	129,215	9,285	35,515	174,015
Tennessee	86,010	7,240	22,180	115,430
Alabama	100,545	4,640	22,615	127,800
Mississippi	36,660	2,960	7,190	46,810
E. SO. CENTRAL	352,430	24,125	87,500	464,055
Minnesota	197,565	24,305	123,630	345,500
Iowa	197,325	12,700	92,510	302,535
Missouri	355,915	27,085	83,205	466,205
North Dakota	18,045	2,040	5,995	26,080
South Dakota	28,885	2,685	9,290	40,860
Nebraska	123,655	7,660	51,460	182,775
Kansas	144,610	13,590	40,110	198,310
W. NO. CENTRAL	1,066,000	90,065	406,200	1,562,265
Arkansas	45,675	3,150	9,445	58,270
Louisiana	123,810	5,905	13,070	142,785
Oklahoma	120,735	7,015	20,745	148,495
Texas	521,075	21,045	37,985	580,105
W. SO. CENTRAL	811,295	37,115	81,245	929,655
Montana	37,105	6,285	11,770	55,160
Idaho	11,815	440	3,760	16,015
Wyoming	19,110	2,050	6,270	27,430
Colorado	184,090	16,710	46,115	246,915
New Mexico	50,720	2,870	7,430	61,020
Arizona	134,450	3,350	8,585	146,585
Utah	98,880	4,400	26,940	130,220
Nevada	10,270	360	715	11,345
MOUNTAIN	546,440	36,665	111,585	694,690
Washington	40,150	4,315	6,885	51,350
Oregon	28,460	2,120	8,180	38,760
California	984,690	89,685	225,215	1,299,590
PACIFIC	1,053,300	96,120	240,280	1,389,700
UNITED STATES	7,828,400	1,111,400	2,966,500	11,906,300

HESS

PLATINUMIZES THE TROUBLE* OUT OF HOME HEATING OIL

* ACTUAL SIZE UNRETOUCHED PHOTOGRAPH OF THE SULPHUR AND CARBON RESIDUE THAT PLATINUMIZING REMOVES FROM ONE GALLON OF ORDINARY HOME HEATING OIL TO CREATE WHITE-HEAT.

You can count on fewer service calls . . . the profit-breaking part of your business . . . when you deliver Hess PLATINUMIZED WHITE-HEAT. Because every last drop of WHITE-HEAT is processed one step further . . . every gallon of WHITE-HEAT delivered to you is free of trouble-causing, heat-retarding sulphur and carbon residues that build up service calls. This is Platinumizing . . . the vital extra step in refining that Hess takes to give you—and your customers—the cleanest, most trouble-free home heating oil obtainable. This is PLATINUMIZED WHITE-HEAT . . . the home heating oil that's premium in every way but price!

PLATINUMIZED WHITE-HEAT—THE BRAND TO BUILD YOUR NAME ON!

Hess, Inc. State St., Perth Amboy, N. J. • phone VAlley 6-1000

TERMINALS: PERTH AMBOY, N. J.* • WOODBRIDGE, N. J.* • EDGEWATER, N. J. • PORT READING, N. J.* • PENNSAUKEN, N. J.* • NEW HAVEN, CONN. • ALSEN, N. Y. • RENSSELAER, N. Y.* • ROCHESTER, N. Y. • SCRANTON, PA.* • BALTIMORE, MD.* • HESS FUEL OILS, INC.: JACKSONVILLE, FLA. • PORT EVERGLADES, FLA. • HESS TERMINAL CORP.: HOUSTON, TEX. • NEW ORLEANS, LA.

*WHITE-HEAT Terminals

BI-METAL CONSTRUCTION FOR BETTER FIRES
EXCLUSIVE ON DELAVAN NOZZLES

Brass body with stainless steel metering parts are the perfect combination for fine nozzle performance. Bi-metal construction is standard on Delavan's complete nozzle line — Type W all-purpose nozzles, Type A hollow cone nozzles, and Type B solid cone nozzles. Specify Delavan nozzles for better fires, top performance.

DELAVAN
Manufacturing Company
WEST DES MOINES • IOWA

Canadian Representative — Ontor, Ltd.
12 Leswyn Road, P.O. Box 608, Station T, Toronto 10, Ontario, Canada

Warm Air Association tells Plans for Cleveland Meeting

NATIONAL WARM AIR HEATING and Air Conditioning Association will hold its 47th annual meeting and national convention at the Statler-Hilton Hotel in Cleveland, beginning Monday, November 14 and ending Wednesday, November 16.

Theme of the convention is to be "America's Goal for '61—Indoor Comfort for Everyone," with the program planned to spotlight concurrent sessions devoted to specific fields of industry interest.

Concurrent Sessions

On Monday, November 14 there will be an all-day Dealer-Contractor Sales and Marketing Forum scheduled at the same time as the Application Engineering Council, the Research Advisory Council and Marketing Council of the Association. The Forum will be an open session; the Association Councils will conduct meetings open to members.

During the Forum the dealers will hear progress reports on the Silver Shield Program as well as the introduction of the Association's Dealer Management Training Program.

Another open session will take place morning and afternoon on November 15, an "Application-Engineering Session." Results and evaluations of current research projects under way at the Association's Research Residence No. 4 will be discussed, in addition to other technical subjects.

At the same time on November 15 a "Manufacturer's Marketing Session" will explore subjects of specific marketing interest to manufacturers.

Voting members of the Association will assemble on the morning of November 16 to hear reports and discussion on Association projects and programs; officers and Board members will be elected at this session. Final scheduled session takes place Wednesday afternoon, November 16, when the Board of Trustees holds its annual meeting.

James M. Martin, managing director, announces that advance registration, with billing to the person's business address, will be available.

...right down the line.....

U.S.-CARLIN pays off in PROFITS!

Any – and every – U.S.-Carlin Oil Burner you sell means dollars in your pocket. Outstanding quality features, consistently dependable performance, proved customer acceptance, and the unqualified backing of one of the best-known names in oil burners are the money-making reasons why you will find it pays to "line up with the line of advanced design." Ask your heating wholesaler today for full particulars.

CONDENSED SPECIFICATIONS

MOTOR – Long-hour duty with safety overload control. Complies with *NEMA* mounting specifications. 1/8 hp. (Models 400, 150F, 400S, 150SF-2, 500S-35); 1/6 hp. (Models 650, 700S-35, 800S-4); 1/4 hp. (Model 1200; 1/3 hp. (Models 2000S-5, 2000).

TRANSFORMER – Shielded to block radio and TV interference. 10,000 volt (12,000 volt on Models 2000S-5, 1200, 2000).

AIR TUBE – Steel with heat resistant air cone.

FAN – Precision balanced. Mounted directly on motor shaft.

NOZZLE – Stainless steel alloy. Hollow cone spray (Hollow cone or solid spray on Models 1200, 2000). Dual nozzles on Models 500S-35, 650, 700S-35, 800S-4, 2000S-5, 1200, 2000.

FUEL UNIT – Single-stage standard on Models 400, 150F, 400S, 150SF-2, 500S-35, 650. Two-stage on Models 700S-35, 800S-4, 2000S-5, 1200, 2000. Built-in strainer and pressure regulating valve. Capacity of strainer equals or exceeds maximum firing rate of burner.

SOLENOID VALVE – Combination delayed-opening and instantaneous cut-off oil valve standard on all "S" models, also 1200, 2000.

COMBUSTION HEAD – Models 150F, 400, and 650 have standard head with diffuser vanes formed at a fixed angle to establish air pattern. Model 150F (0.65 to 1.35 gph capacity) and Model 400 (0.65 to 1.00 gph capacity) have a series of adjustable openings in center of diffuser for regulating air delivery to shape the fire. All "S" Models have "Shell Head" and finned collar for efficient mixture of air with oil. Models 1200, 2000 have High Temperature Combustion Head with finned collar for greater firing rate (Model 2000) and narrower fire.

ELECTRODES – Nichrome steel with full-glazed porcelain insulators counterbored for utmost safety. Flared, "Wide-arc" design permits heavier spark and assures positive protection during low voltage periods.

BUS BARS – Rigid heavy-gage brass (Models 400, 400S, 500S-35, 700S-35, 800S-4); phosphor bronze (Models 150F and 150SF-2); high tension leads (Models 650, 2000S-5, 1200, 2000).

HOUSING – Cast iron. Designed to assure efficient air delivery and quiet operation. Machined to rigid standards.

COUPLING – Universal type with neoprene center piece. (Flexible type on Models 2000S-5, 1200, 2000).

CONTROLS – Thermostat, Limit Control, and Stack Relay. Electronic Control set in place of Stack Relay on Models 800S-4, 2000S-5, 1200 and 2000.

ELECTRICAL CHARACTERISTICS – 115V-60 cycle. 1725 rpm. All models except 150F and 150SF-2 available with 230V-60 cycle on special order. Also a complete line of 110 and 220V-50 cycle models with capacities from 0.50 to 15.00 gph.

U.S.-Carlin Oil Burners are listed by Underwriters' Laboratories, Inc. and are approved under U. S. Government Commercial Standard CS75-56 where applicable.

MODEL 400 0.65 to 1.00 G.P.H.
Also available for flange mounting
MODEL 400S 0.75 to 3.00 G.P.H.
Also available for flange mounting
MODEL 150F 0.65 to 2.00 G.P.H.
Also available for pedestal mounting
MODEL 150SF-2 0.65 to 1.35 G.P.H.
Also available for pedestal mounting
MODEL 500S-35 3.00 to 4.50 G.P.H.
MODEL 700S-35 3.50 to 7.00 G.P.H.
MODEL 650 3.50 to 6.50 G.P.H.
MODEL 800S-4 4.00 to 8.00 G.P.H.
MODEL 1200 6.00 to 12.00 G.P.H.
MODEL 2000S-5 7.00 to 12.00 G.P.H.
MODEL 2000 10.00 to 20.00 G.P.H.
US CARLIN OIL BURNERS

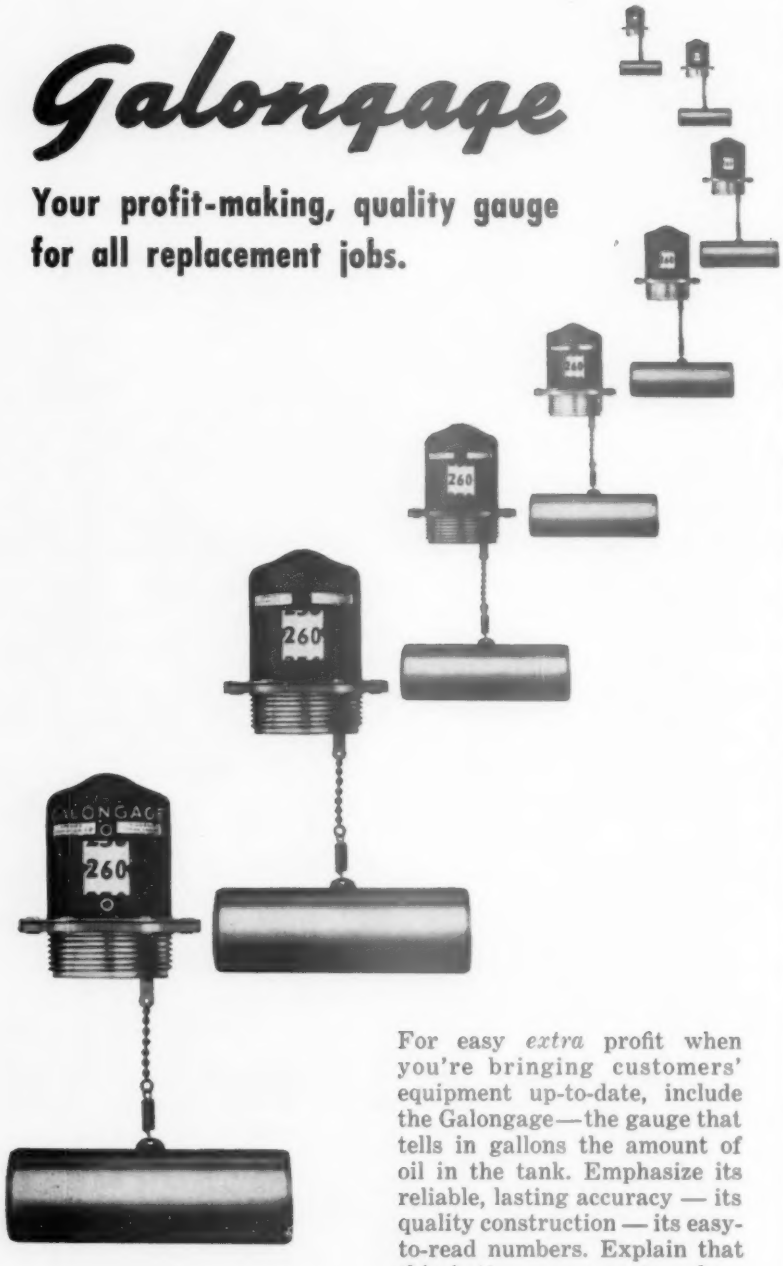
They Outsell because they Excel

THE CARLIN COMPANY • WETHERSFIELD, CONN.

MID-WEST REPRESENTATION – COMPLETE BURNER STOCKS AT CHICAGO

Galongage

Your profit-making, quality gauge for all replacement jobs.



For easy *extra* profit when you're bringing customers' equipment up-to-date, include the Galongage—the gauge that tells in gallons the amount of oil in the tank. Emphasize its reliable, lasting accuracy — its quality construction — its easy-to-read numbers. Explain that this better gauge costs only a little more — that it's the logical modern replacement for any other previously installed gauge.

In addition to your assured sales profit, you'll find the Galongage is easy to install, less expensive to ship, and packaged to fit easily into a serviceman's kit.

Galongage
is a product of
APPLIED MECHANICS COMPANY
381-385 CONGRESS ST., BOSTON 10, MASS.

Building Contracts improve; home Building declines 14%

AFTER A SLOW START, construction contracts rebounded nicely in the first half of 1960 and by June reached a point not too far below the high levels of last summer, F W. Dodge Corp. reports.

In a midyear review of construction contracts published in the Dodge monthly bulletin, *Building Business*, the Corporation's economists pointed out that non-residential building contracts in the first six months of this year reached the second highest first-half total in history, while heavy engineering contracts dropped slightly below last year and residential contracts were down a sizable 14%.

Housing gain possible

Noting that the decline in residential contracts was generally expected and that recent reports indicated that the mortgage market may be gradually loosening up, the report said:

"If there is some second-half gain in housing, and there should be, coupled with the improvement occurring in contracts for non-residential building and heavy engineering, 1960 will wind up as a pretty good year for the construction industry, although it is not likely to be a record-breaker."

Other key developments noted in the review, which was written by Dr. George Cline Smith, Dodge vice-president and chief economist, and Edwin W. Magee Jr., Dodge economist, include:

Contracts for commercial buildings, at $1,705,000,000, were almost exactly the same as the record total in the first half of 1959;

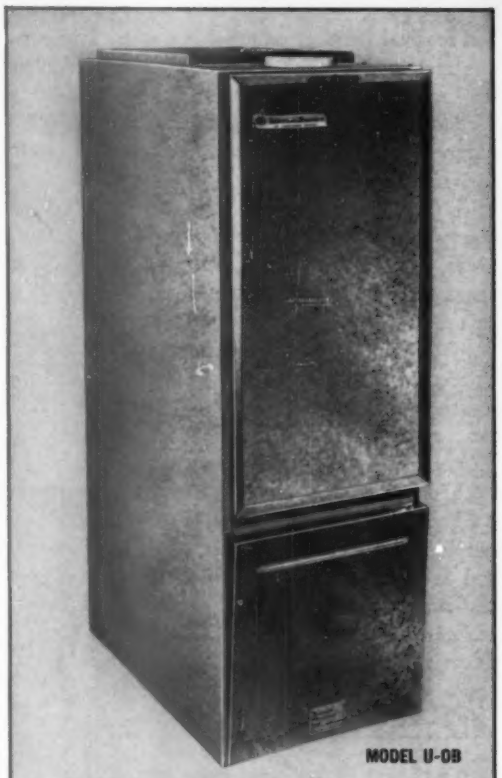
The largest dollar gain was reported for schools, which rose 12% above the 1959 level to $1,465,000,000;

The weakest major sector was residential building, and the weakest part of this sector was one- and two-family houses, down 16%;

Definite signs of improvement in the non-residential and heavy engineering sectors were showing up late in the first half, and particularly in June.

THESE AMERICAN-STANDARD OIL FURNACES ARE FACTORY ASSEMBLED AND WIRED TO

CUT INSTALLATION COSTS



MODEL U-OB

MODEL CF-OB

NEW! Upflow Model U-OB

60" low x 20"-27" wide x 32½" deep

4 sizes: 84,000–95,000–112,000–140,000 Btuh

This brand-new oil-fired winter air conditioner is shipped completely factory-assembled and wired, with burner installed. Burner and controls are completely enclosed in an attractive cabinet that's so compact you can install it almost anywhere—basement, utility room, game room, hallway, alcove.

The small size is made possible by a new-type sectional heat exchanger that gives more heating surface in less space, extracts maximum heat—and gives *you* a strong fuel-economy sales story. Both the primary control—with flame-sensing device in the burner blast tube—and the fan-and-limit control are factory-connected to a single Central Control Station.

NEW! Counterflow Model CF-OB

65" low x 20"-24" wide x 32½" deep

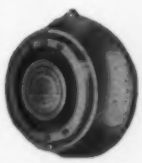
3 sizes: 84,000–95,000–112,000 Btuh

Here is the best-engineered counterflow unit made today.

For example, a new-type sectional heat exchanger provides maximum radiation surface in minimum space. The new Central Control Station handles *every* operation of the furnace automatically. The new primary safety control is factory-mounted right in the burner blast tube.

"MERCURY-ROUND" THERMOSTAT

Here's big news! This DeLuxe mercury-activated Thermostat is standard equipment on all belt-drive furnaces *at no extra cost.* The new hermetically-sealed mercury switch eliminates dust and dirt problems. Clear plastic baseplate speeds installation. If desired, cover can be detached and painted to match any color scheme.



Both the U-OB and the CF-OB are equipped with the proven American-Standard "ACD" burner, which has earned a reputation among dealers as "the most reliable burner on the market." These two units are *all* you need to handle 95% of your oil-fired installations—basement, utility or counterflow. (If you need larger capacity, a two-furnace installation has definite advantages.) Units convert easily to gas . . . cooling is easily added. Get the spec sheets and the low competitive prices at your American-Standard distributor today.

AMERICAN-Standard

AIR CONDITIONING DIVISION

Elyria, Ohio

for
all-star
sales performance
sell
LINCOLN
★ HIGHEST QUALITY
★ FULL FLEXIBILITY
★ HANDSOME PROFITS

LINCOLN Oil-Fired Cast Iron, Packaged, Automatic Boiler. Available from 111,000 to 180,000 Btuh gross I-B-R output.

Here's a star in any dealer's show room. Advanced, honey-comb boiler design assures maximum heat transfer in minimum space. Equipped with extra-large copper-tube tankless water heater. All controls prewired and factory tested.

Write for full descriptive literature and get all the reasons why it pays to push the LINCOLN line!

LINCOLN
AIR-CONTROL
PRODUCTS, INC.
Manufacturers of Heating and Cooling Equipment
SWARTHMORE, PENNSYLVANIA

Petroleum Agency wants higher fourth quarter residual Quotas

ANALYZING the East Coast residual fueloil outlook for the remainder of 1960, the Petroleum Industry Research Foundation has concluded that the Federal import quota for residual fuel should be no less than 560,000 barrels daily in the fourth quarter. The research agency contends that this 29% increase over comparable imports last year is necessary to avoid a shortage in the coming heating season.

The study also predicts a decrease in residual oil stocks during the current third quarter, in contrast to the normal seasonal pattern of stock increases, because import quotas for the June-September period have been set nearly 15% below last year, despite an expected rise in demand and an evident decline in domestic supply. As a result, stocks, which already were considerably below normal at the end of June, will be so low by September 30, according to the study, that fourth quarter residual fueloil requirements this year will have to be met entirely from new supplies.

PIRINC's import quota recommendation also includes 55,000 barrels daily to replenish stocks during the fourth quarter, in anticipation of normal inventory reductions during the January-March peak consumption period. PIRINC said if demand would have to be met entirely out of new supplies during this period, operational break-downs and shortages would ensue.

The study also calls attention to the fact that a residual fueloil shortage would have serious consequences on the East Coast, since about 21% of the area's heating fuels consist of residual oil (nearly 2/3 of which is imported). Furthermore, only about 40 utilities and a few large industrial plants could readily switch to

EAST COAST RESIDUAL FUEL OIL SUPPLIES, 1959

Source	*(000 barrels daily)*	*(percent of total)*
Imports*	604	65
Local Refinery Output	178	19
Transfers from U. S. Gulf Coast	119	13
Transfers from U. S. West Coast	17	2
Other sources	14	1
	932	100

*As reported by the American Petroleum Institute.

THE EAST COAST HEATING MARKET*, 1959

	Quantities in 1000 unit	*Converted to billion Btu's*	*Percent of Total*
Natural Gas	1,902 million cft.	1,997,310	20.0
Coal	136,914 tons	3,587,147	35.9
Anthracite	16,000 tons	406,400	4.1
Residual Fueloil	337,364 bbls	2,132,815	21.2
Distillate Oil	323,232 bbls	1,882,826	18.8
		10,006,499	100.0

*Includes all uses of above fuels in East Coast states.

RESIDUAL FUELOIL STOCKS AT EAST AND GULF COASTS*

	(million bbls)			
	1957	*1958*	*1959*	*1960*
End March	21.0	24.0	32.9	18.9
End June	25.8	30.8	31.6	22.2
End September	36.4	36.3	32.6	(21.0)F
End December	34.6	29.3	25.9	

*As reported by the Oil Imports Administration.
F—Forecast by PIRINC.

New from Honeywell

R7

PROGRAMMING RELAY

ANOTHER DIAMOND JUBILEE PRODUCT

HONEYWELL'S IMPROVED R478 *Gold* FOR A PURPOSE!

The new gold color is the result of a zinc-plated dichromate finish for better resistance to corrosive industrial atmospheres. But that's only one of a variety of new advantages making this new programming relay the most versatile, the most flexible, the *best* for commercial-industrial applications. These include packaged boilers, horizontal rotaries, steam and air atomizing oil burners, large power gas burners and combination oil-gas burners.

THE R478'S SIMPLIFIED DESIGN FEATURES:

- 50% fewer tubes . . . fewer parts mean longer life.
- Transistorized power supply—silicon diodes assure long, trouble-free operation.
- Simplified electronic timing—one tube provides pre-purge, post-purge, and trial for main flame ignition timings.
- Easy installation . . . fits same mounting cabinet as older model of the R478.
- Unsurpassed application versatility, sequencing flexibility, voltage selectability.
- Armored back . . . a back cover plate protects wires and components when relay is out of the cabinet.

THE NEW R478A programming relay can be used with Honeywell's foolproof C7012 ultraviolet flame detector to sense both gas and oil flames. It can also be used with either flame rods or standard photocells.

THE R478B includes all the features now incorporated into the R478A. The B model is designed especially for use with a lead sulfide cell to detect both oil and gas flames.

THE R4074 is designed for use with the smaller commercial-industrial burners and boilers. Like the R478B it is used with a lead sulfide cell to detect both gas and oil flames. The R4074 also incorporates all the new features built into the new R478s.

UL FM

Whatever your commercial or industrial safety problem, you'll have the BEST in a flame safeguard performance with the Honeywell line . . . Built to last, built to perform best, built for easy installation, trouble-free maintenance. Ask your Honeywell representative to PROVE it to you!

FOR FULL SPECS AND DETAILS, CALL YOUR LOCAL HONEYWELL OFFICE, OR WRITE TO HONEYWELL, MINNEAPOLIS 8, MINNESOTA; PHILADELPHIA 44, PENNSYLVANIA; OR TORONTO 17, ONTARIO

Honeywell

H HONEYWELL *First in Control* SINCE 1885

76-8815 Printed in U.S.A.

other fuels, if necessary. These users account for less than 10% of total regional residual fueloil sales. Most residual oil consumers would therefore have to do without any fuel, in case of a serious shortage, says PIRINC. This includes apartment houses, public buildings, ships and many industrial and power plants.

The recent sharp, contra-seasonal increases in residual fuel prices will cost East Coast consumers $20-25 million for the remainder of the year, but will not bring forth more volume, according to the study. Residual fueloil still sells well below its raw material cost; refiners, therefore, treat it as a non-profitable by-product, to be reduced to its technical minimum.

The situation is quite different overseas, due to different refinery patterns and crude-oil qualities. But residual shipments from abroad are determined by U. S. government edict, not by the interplay of supply and demand, says the PIRINC study.

Letter to the Editor

Nanuet, N.Y.

Editor:

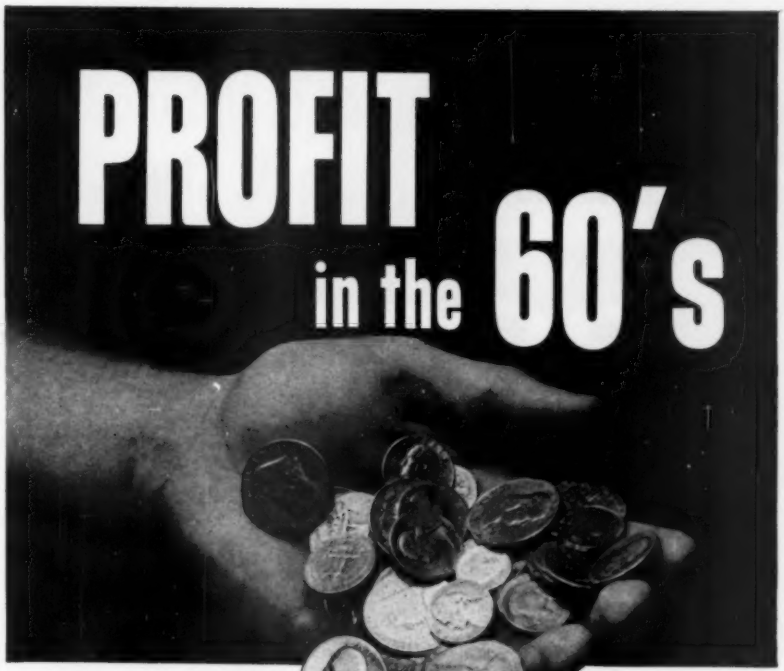
The article in your July issue ("Blue flame Oilburner") described my invention accurately. Since then several equipment manufacturers have shown interest.

The article was correct in stating that observed using No. 2 fueloil the burner produced a flame predominantly blue, but on a highly critical basis not 100% blue.

I do want to report that since the article I have made a slight change which increased the burner's flame temperature. The result is that the flame now is absolutely 100% blue with the burner using No. 2 fueloil.

I also would like to report on the recommendation of your Technical Editor, John Schulz, I am doing extensive work with combustion testing instruments. The burner using No. 2 fueloil results in readings of 14.5% CO_2 with a zero smoke reading.

ANDREW PALKO



with YORK-HEAT

Proved Products — York-Heat oil-fired boilers and furnaces have for more than 40 years been regarded as the highest quality products for automatic heating.

New Products — Now York-Heat engineers have developed new *gas-fired boilers and furnaces skillfully designed* for market needs, priced competitively, and styled for the 60's.

Old Friends — York-Heat equipment has for years been used by the nation's largest builders. These men buy quality products—products that will deliver years of trouble free operation for the buyers of their homes.

New Friends — York-Heat's distributing organization is growing rapidly, but good protected territories remain available for distributors and dealers who are interested in profitable business in the 60's.

Write today for details.

YORK HEAT

YORK-SHIPLEY, inc.

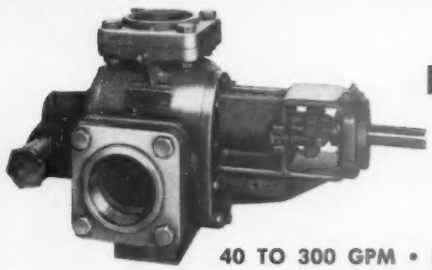
Pioneer and Specialists in Automatic Heat

Boilers to 600 Hp.
Furnaces to 5 Million B.t.u.h.

YORK, PENNSYLVANIA

For bulk plant and transportation applications where conditions demand the best...choose the best

ROPER
ROTARY PUMPS



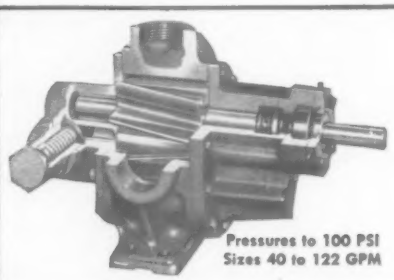
Built for fast, cost-saving deliveries

40 TO 300 GPM • PRESSURES TO 100 PSI

Time is money! And speedy Ropers help keep deliveries on schedule because they make short work of liquid transfer . . . their rugged, service-proved construction makes them highly dependable for day-in, day-out heavy duty operation. There's a Roper in the size to fit your needs, whether pumping thick or thin clean liquids. Next time—specify Roper!

For Local Delivery Fig. 3605 Tank Truck Pump

Cast iron pump with hardened iron helical gears and steel shaft. Handles thin or thick liquids . . . operates smoothly and quietly in either rotation. Mechanical seal is self-adjusting; precision-lapped mating surfaces. Series 3600 also available with packed box.



Pressures to 100 PSI
Sizes 40 to 122 GPM

For Bulk Plants Series 3600 Pump

Furnished on steel bed plate with or ready to receive motor; complete with totally-enclosed anti-friction gear reduction. Use indoors or outdoors; no pump house needed. Three gear ratios available.

Pressures to 100 PSI
Sizes 30 to 300 GPM

ROPER
ROTARY PUMPS

ROPER HYDRAULICS, INC.
Commerce, Georgia

Calendar of Coming Events

OCTOBER

9–11—Tennessee Oil Men's Association, fall meeting, Andrew Jackson Hotel, Nashville, Tenn.

9–12—North Carolina Oil Jobbers Association, Grove Park Inn, Asheville, N. C.

9–15—National Oil Heat Diamond Jubilee Week, sponsored by Oil-Heat Institute of America.

10–11—Indiana Independent Petroleum Association, Fall Convention, Trade Show, Hotel Severin, Indianapolis, Ind.

16–18—National Association of Oil Equipment Jobbers, Convention and Trade Show, Sheraton-Jefferson Hotel, St. Louis, Mo.

17–19—Iowa Independent Jobbers Association, Management Conference, State University of Iowa, Iowa City.

19–21—Fuel Merchants Association of New Jersey, annual convention, Atlantic City, N. J.

29–Nov. 4—Oil-Heat Institute, cruise and management conference, aboard the Queen of Bermuda, sailing from New York.

NOVEMBER

4– 7—National Oil Jobbers Council, meeting, Congress Hotel, Chicago.

14–16—American Petroleum Institute, 40th annual meeting, Conrad Hilton, Palmer House, & Congress Hotels, Chicago.

14–16—National Warm Air Heating and Air Conditioning Association, 1960 convention, Statler-Hilton Hotel, Cleveland.

20–22—Fluid Contols Institute, fall meeting, Drake Hotel, Chicago.

27–30—Northamerican Heating and Air-conditioning Wholesalers Association, Fall Convention, Statler Hilton Hotel, Detroit.

28–Dec. 2—American Society of Mechanical Engineers, Power Show, Coliseum, New York City.

JANUARY

18–19—Northwest Oil Jobbers Association, convention, Minneapolis.

FEBRUARY

13–16—American Society of Heating, Refrigerating & Air-Conditioning Engineers, International Heating & Air-Conditioning Exposition, International Amphitheatre, Chicago, Ill.

MARCH

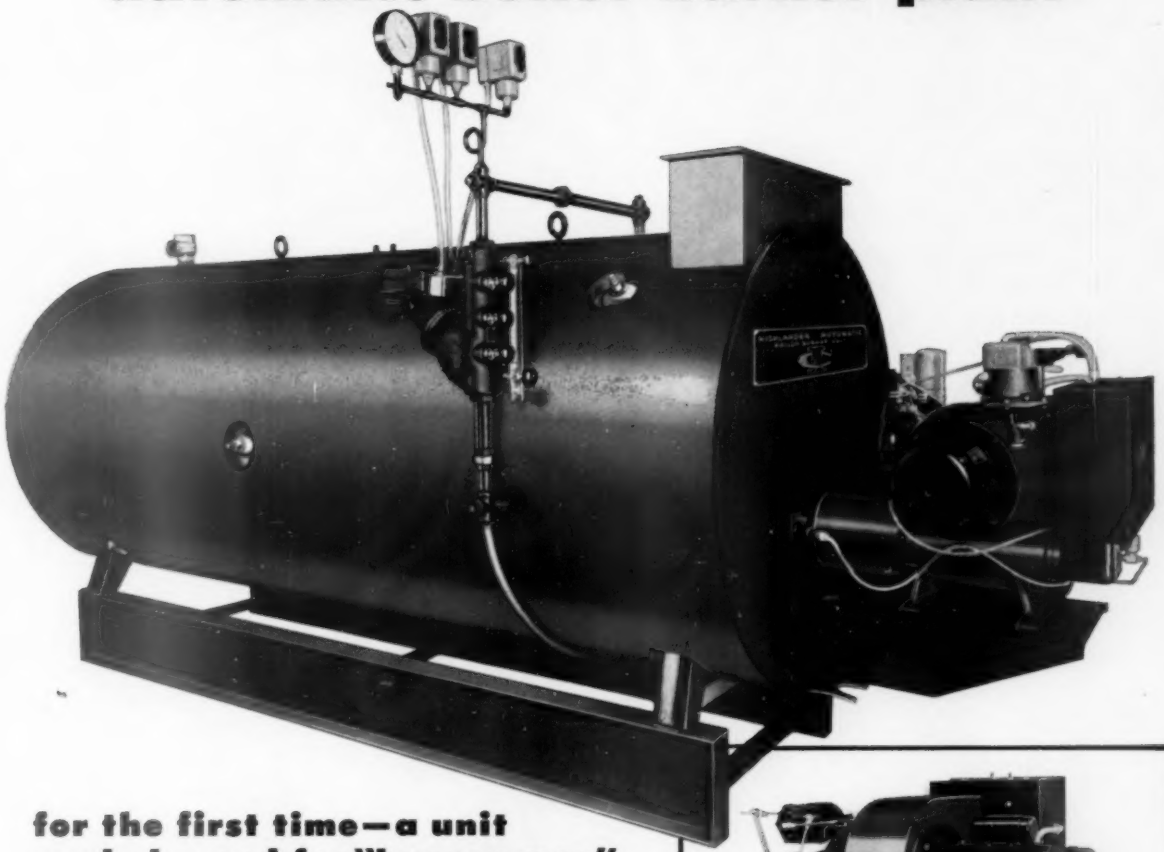
6– 8—Canadian Air Conditioning & Heating Council, National Heating & Air Conditioning Show, Automotive Bldg., Exhibition Park, Toronto.

APRIL

23–26—Oil-Heat Institute, convention, Statler-Hilton Hotel, Washington, D. C.

NEW HIGHLANDER

automatic boiler-burner plant



for the first time—a unit made by and for "burner men"

The burner industry has been waiting for an oil burner man's boiler. Industrial Combustion, Inc., puts the burner *before* the boiler with its new Highlander. This completely assembled boiler-burner plant (Scotch-type two-pass unit) has been designed and constructed from the burner specialist's point of view — built to bring out the best efficiency and reliable operation of the burner.

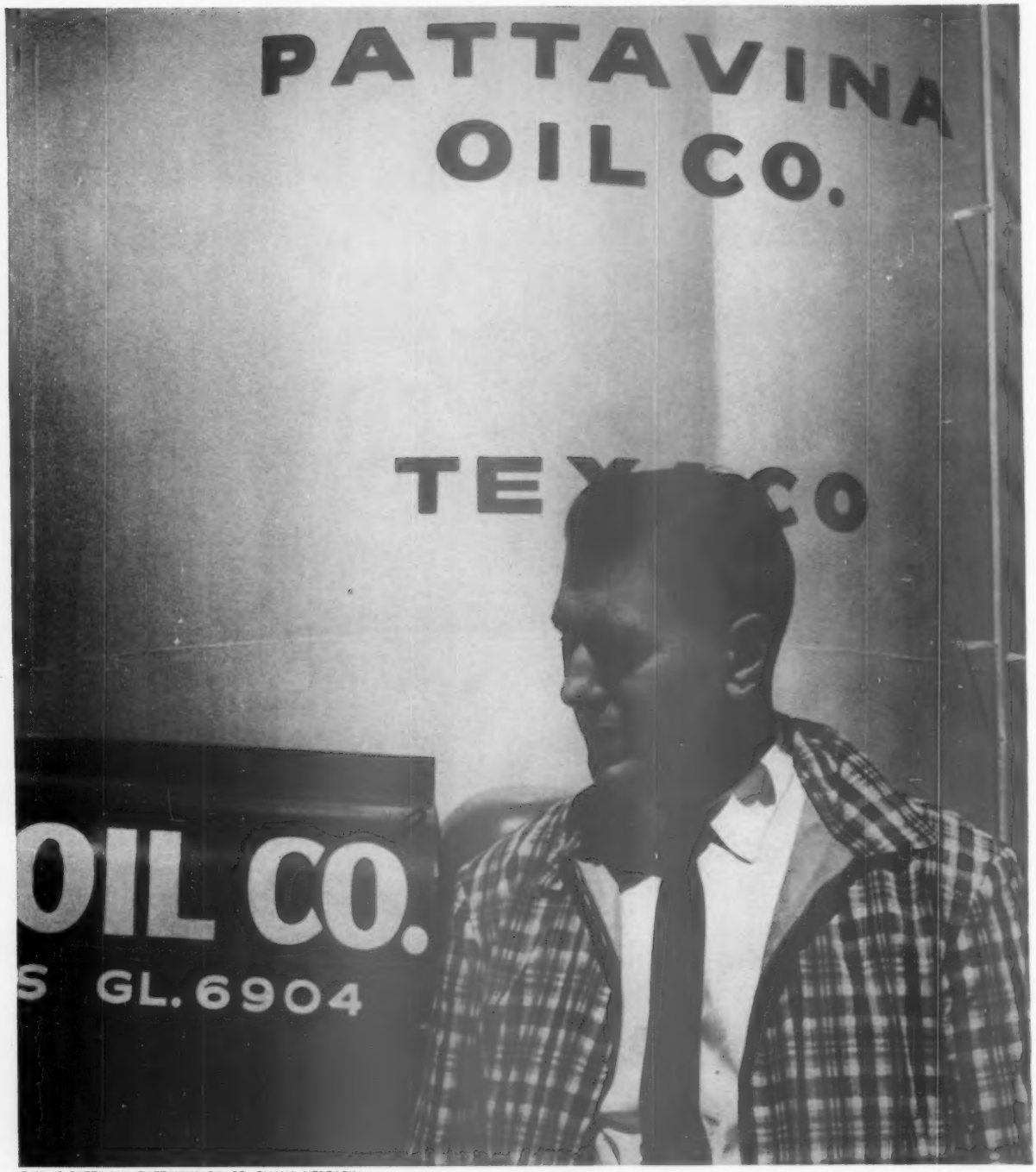
And "burner men" design is just the beginning! The new Highlander will be sold exclusively by authorized Industrial Combustion dealers. It will be installed and serviced by these qualified burner technicians.

Write today for complete information — Dept. FO-90.

HEART OF THE HIGHLANDER is the famous Industrial Combustion burner. Shown is the HEV-E-OIL burner especially engineered to make use of inexpensive heavy oils — number 4 and 5. Number 6 or Bunker C in larger models. Available from 5 to 150 gph.

INDUSTRIAL COMBUSTION INC.

EXECUTIVE OFFICES: 4507 N. OAKLAND AVE., MILWAUKEE 11, WIS.



PAUL E. PATTAVINA, PATTAVINA OIL CO., OMAHA, NEBRASKA

"We signed up with Texaco 3 years ago, chiefly because of the tremendous brand acceptance enjoyed by Texaco. Our heating accounts have increased 15%, and service calls have decreased by 10%. We get friendly, personalized service from Texaco and we like their sound jobber policies, too." Sell the best...sell **TEXACO**

5 reasons why it pays to be a Texaco Fuel Chief Distributor

1. Texaco Fuel Chief is clean-burning.
2. Dependable and efficient delivery at all times.
3. Immediate acceptance. Fuel Chief is sold under the nationally famous trademark, the Texaco red star with the green "T".
4. One of the largest producers of heating oil, Texaco is the only petroleum company to build up successful distribution of its products nationwide.
5. Profitable and proved sales policies.

A PROMISING FUTURE is one of the advantages of being a Texaco Fuel Chief Distributor. There may be an opportunity for *you*. Investigate — send this coupon to Manager, Fuel Oil Sales Division, Texaco Inc., 135 E. 42nd St., New York 17, N. Y.

TEXACO FUEL CHIEF HEATING OIL

FOH-9

I would like complete information about the possibility of teaming up with Texaco as a Distributor of Fuel Chief Heating Oil.

NAME_____

STREET_____

CITY_____

STATE_____

New Officers are elected for Manufacturer Division

TOM REED, Minneapolis-Honeywell Regulator Co., has been elected chairman of the Domestic Manufacturers' Section of the Manufacturer Division of the Oil-Heat Institute of America, according to Gabe Marin, chairman of the Manufacturer Division.

Other officers elected by this Section were Shep Doherty, A. W. Cash Valve Co., vice-chairman and R. W. Hundley, FUELOIL & OIL HEAT, secretary.

Equipment Jobbers to hold annual Convention in Fall

THE NATIONAL ASSOCIATION of Oil Equipment Jobbers is planning to hold its tenth annual convention in St. Louis, beginning October 16.

Featured events include a trade show, the largest ever according to the Association, a talk by Vance Packard, author of *The Hidden Persuaders* and *The Status Seekers*, and the annual banquet. A program for visiting wives is scheduled.

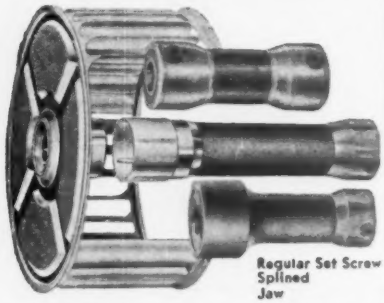
Yes, you've got a good thing in oil heat . . . the prestige heat! Just ask the 3 million Chicagolanders who enjoy the matchless comfort of oil heat. They'll tell you it's . . .
clean—You bet! No other fuel can give you *cleaner* heat. Oil is scientifically pure—the only heating fuel man-made to research specifications. Oil has *all* the clean-burning qualities.
safe—Beyond question, oil is the safest modern, automatic fuel. And there's no worrisome pilot light to flicker out in the middle of the night.
dependable—No fluctuating supply from cold-weather pressure drops. Your fuel supply is at home. You control your comfort.
costs less—You get more BTU's (heat) in every dollar's worth of oil than you get in a dollar's worth of the other popular fuel. And you have freedom of choice of supplier.
Oil Heat
FINEST HEAT UNDER THE SUN
OU'VE GOT A GOOD THING IN OIL HEAT
clean
safe
dependable
costs
less
Chicago Daily News CHICAGO LIFE
JULY 16, 1960

This is a reproduction of the first four-color advertisement run by the Oil Heat Council, Inc., Chicago. This one appeared in Chicago Life, July 16 supplement of the Chicago Daily News. It also was inserted in the Chicago Tribune and the Sun Times, appearing on succeeding weeks in each of these papers. The Council expects to have a total of six different advertisements during the year. The Council also reports saturation coverage on leading radio stations, it expects to have billboards ready by December and is preparing oilheating literature.

QUALITY is our business .. without *any* compromise

***AND ONLY Guardian* GIVES YOU ALL THREE—**

1. FLEXIBLE COUPLINGS



Regular Set Screw
Splined
Jaw

Only Guardian gives you these features—

- ROLL SPINNING—Exclusive process joins all three components at one time—while in final operating alignment.
- BRAIDED RUBBER—Ground to absolute true concentricity. Furnished in BUNA-N TUBE and NEOPRENE COVER. Lateral and angular alignment requirements fully met.
- ONE-PIECE DESIGN—Minimizes assembly and handling costs. Made to exact lengths required.

Over 5,000,000 Guardian couplings are on original equipment. This is your assurance of highest quality and universal acceptance in the field.

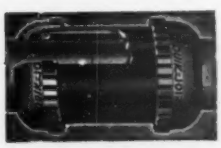
2. OIL TANK VALVES

No. 1910 B

Check These Superior Guardian Features—

- Metal-to-metal seating.
- Highest quality machined bar stock.
- Greater wall and body strength.
- Fusible linkage available in all designs.
- Valve designs for every type of installation.

3. QUIK JOINT



Steel compression fittings for connecting steel pipe.

Patent No. 2,685,460

- Eliminates threading of pipe.
- Decreases cathodic corrosion and electrolysis.
- Guaranteed for pressure up to 2000 P.S.I.
- Allows 7° angular deflection.
- U.L. approved for oil and gas.

Write for free descriptive literature.

Guardian PRODUCTS CORP.
COUPLING DIVISION

Dept. F-90 1215 East Second Street
MICHIGAN CITY, INDIANA

Minneapolis advertising on fueloil trucks. On this Schirmer rig, the slogan, "Oil heats best" has been painted. The Northwest Petroleum Association is also offering its members decalcomanias containing the same slogan and printed in color. Decals are available from the IFI Agency, Duluth, Minn.

N. J. Fuel Merchants plan Atlantic City Convention

THE FUEL Merchants Association of N. J. will hold their annual convention in Atlantic City. Oct. 19 through 21.

An exhibit is scheduled, as is a "Fueloil Day," which will be devoted entirely to matters of interest to fueloil dealers.

Oil Heat Association of Md. has its 10th annual Outing

THE COUNTRY Club of Maryland was the scene of the OHA of Maryland's 10th Annual Outing. (See photo.)

Jack Wailes, J. B. Wailes & Sons, president of the Maryland group, presided at the more or less formal aspects of the party, and Bunny Michel, R. E. Michel Co., was in charge of entertainment. Golf was in the capable hands of Bob Lee, General Automatic Corp. One of the highlights of the one day affair was the awarding of prizes for golf and the various other games and a large number of door prizes.

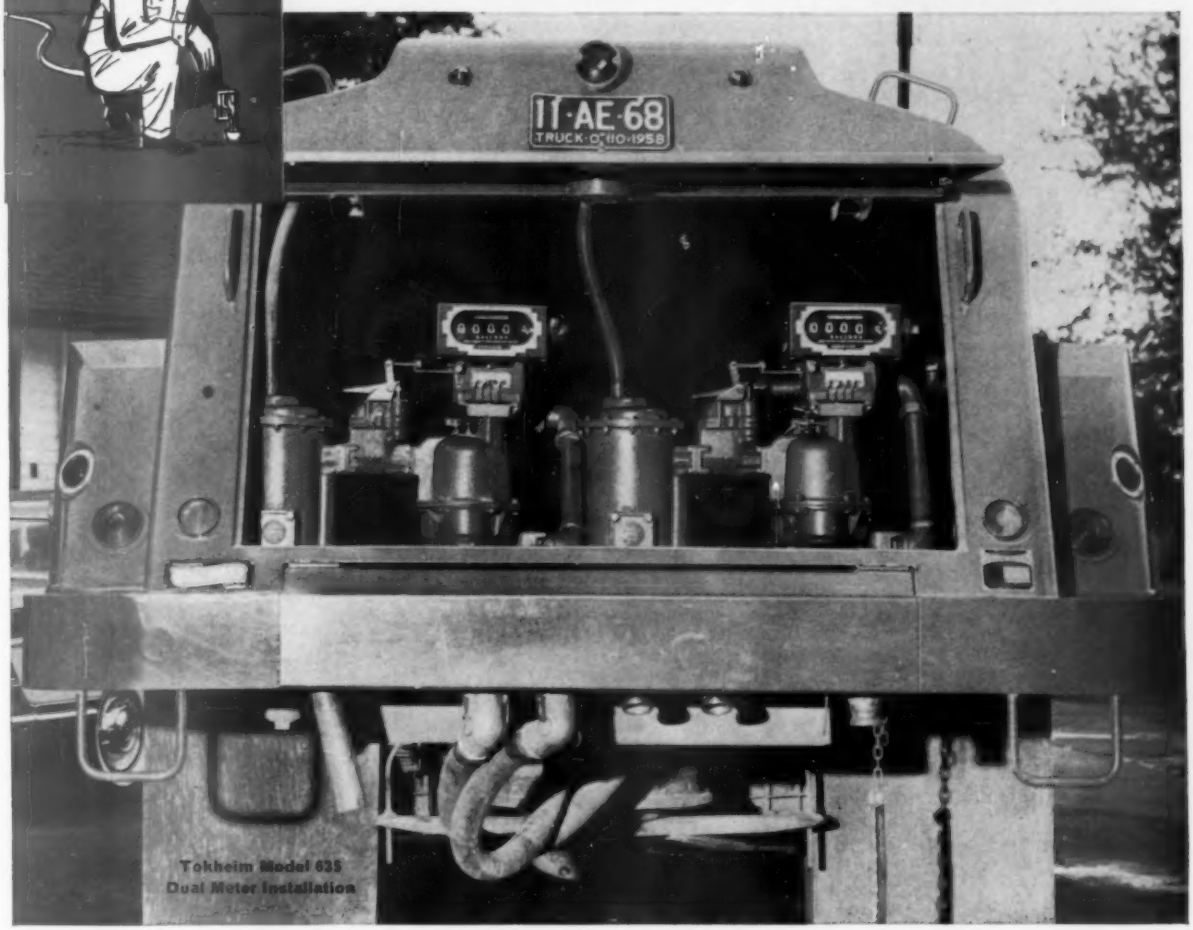
Technical Division meets; Research Results reported

THE TECHNICAL DIVISION of the Oil Heat Institute of America met in July at the Texaco Research Center, Beacon, N. Y., and reported a number of developments of interest to the oilheating industry.

J. O. Collins, Esso Research & Engineering, reporting for the Tank Corrosion Committee, said the Committee had approved the use of C-1008 and C-1010 steel for specimens in qualifying tests for corrosion inhibitors.

Results of a dealer survey, printed in the August issue of FUELOIL & OIL HEAT, conducted by the Distribution Division and Market Research

While the driver tends the nozzle...



Tokheim Model 635
Dual Meter Installation

TOKHEIM's pre-set meters control flow, measure accurately, record transaction!

Drivers depend on Tokheim Meters to shoulder a healthy share of the work on every fuel delivery. After driver sets gallonage, Tokheim's Pre-set Control takes over! Lets product flow up to 40 g.p.m. until three seconds before completion. Then, smoothly, automatically reduces flow to 11 g.p.m. Gently cushions automatic stop — eliminates shock and strain. Gallonage is accurately measured at any rate of delivery. Recorded and receipted, too, by Ticket Printer (optional).

Tokheim's own new meters are precision instruments. All vital working parts are rugged stainless steel or other noncorrosive materials. Will measure any of today's fuels, day in and day out, without a maintenance problem. Air separator and strainer are reversible. Ideal for either single or dual installations—for tank trucks, bulk plants, airports or industry. Ask your Tokheim representative about *improved* Model 635 Meters today.

SYMBOL OF EXCELLENCE

QUALITY TOKHEIM Gasoline Pumps and Accessories

General Products Division
TOKHEIM CORPORATION
1690 WABASH AVE. FORT WAYNE 1, IND.

Subsidiaries: GenPro Inc., Shelbyville, Indiana; Tokheim of Canada, Ltd., Toronto, Ontario; Tokheim International, A. G., Lucerne, Switzerland

SAVE
. . . TIME
. . . MONEY
. . . EFFORT
with
REBUILT
HEATING
EQUIPMENT
by Paco
INDUSTRIES INC.
ONE SOURCE
FOR ALL
MODELS AND MAKES

Here's Why —

1. Paco assures finest customer service possible. Recent relocation to greatly expanded quarters, with modern equipment and streamlined operational efficiency has contributed to this fact. Skilled technicians, precision testing and quality control augments this service — to give you rebuilt equipment held to the highest Standards.
2. Paco's production-line economy gives you the equivalent of custom-job rebuilts . . . at unbelievable cost savings. Savings that mean more profits for you.
3. Paco's high quality cannot be denied. Finished units are comparable to new . . . in appearance and performance . . . with like guarantee given.
4. Paco takes pride in its prompt shipments. A constant reserve of over 25,000 ready-to-ship units makes immediate delivery an every day occurrence.

Good reasons why Paco is considered the "Foremost Rebuilders of Equipment for the Heating Industry."

People are talking about Paco Industries, Inc., and the benefits that we have to offer. We'll be glad to talk to you . . . on how Paco can best serve you with your Rebuilt Heating Equipment requirements. Your inquiry is invited.

FREE CATALOG . . . 36 pages, listing approx. 12,000 units, is available from your local wholesaler.

AUTHORIZED REBUILDERS OF
CONTROLS - FUEL UNITS - WATER FEEDERS
CIRCULATORS - TRANSFORMERS - GAS VALVES, etc.

Paco
INDUSTRIES INC.
461 SOUTH DEAN STREET
ENGLEWOOD, NEW JERSEY

Department of OHI were reported.

W. W. Cole, Texaco, Inc., chairman of the Technical Information Committee, reported that a list of subjects is being prepared on which talks can be given by members of the Speakers Bureau. These include degree-day systems and delivery techniques and principles of domestic hot water systems among others.

A. C. Smith, Jr., Atlantic Refining, reporting for the Committee on Test Methods, said results and findings with regard to smoke spot tests would be released shortly.

Cole, reporting for the Committee on Filters, said that 12 to 15 filter elements, submitted by filter manufacturers, are currently under observation by the committee in control burner installations.

New England OHI announces oilburner service Schools

THE OIL HEAT INSTITUTE of New England announced the opening of Group I of their 1960-61 oil-burner service school on Monday, September 12 at Fitchburg, Mass.; Tuesday at Concord, N. H.; Wednesday at Portland, Me.; Thursday at Lewiston, Me.; and Friday at Dover, N. H.

This is a nine-week course which will be held in 15 New England areas. Group II starts January 9, 1961, and covers Providence, R. I.; New London, Conn.; New Bedford, Hyannis and Quincy, Mass. Group III starts March 27, 1961, and covers Peabody and Springfield, Mass.; Hartford and New Haven, Conn.; and Waltham, Mass.

The course is designed to keep servicemen up-to-date on new equipment, new service methods and service tips.

The instructors are representatives from various manufacturing companies and present their stories from a purely service standpoint. Upgrading the oil industry by better service is the prime objective of this school.

There is a nominal charge for the course. For further information, contact Hollis L. Farrow, Director of Education, Oil Heat Institute of New England, 330 Stuart Street, Boston 16, Massachusetts.

EVER-TITE
210

your best buy
for high pressure deliveries

Dash-pot feature assures better control under extreme pressures — less shock after delivery

•

Seals of dual poppets are gasoline and oil resistant

•

Vacuum breaker feature available

•

Aluminum body, bronze parts

•

Rigid or flexible tubes

•

All parts are completely interchangeable with parts of other "210" nozzles on the market

•

Order now from your Ever-Tite distributor, or write for details

EVER-TITE COUPLING CO. INC.
254 West 54th Street
New York 19, N. Y.

...it has to be troublefree!

Here's all there is to a TACO Perfecta Pump: 1. Stator housing. 2. One moving part (the rotor and impeller *unitized* on the same shaft). 3. Pump body. And that's the secret of its success . . . simple troublefree design *throughout*.

For example, there is no coupling between motor and impeller . . . nothing to break, stretch, or develop play and noise. And it's the first *successful* water-lubricated circulator. Rotor and impeller operate completely submerged in water . . . deliver maximum power.

The Perfecta has many other advanced features which make it so troublefree: no seals to leak, wear, or create extra friction; no starting switch to develop trouble — and many more. And, it's compact and easy to install.

It will pay you to get complete details on the Perfecta Pump. All products in the broad TACO Line are "efficiency engineered" to provide maximum performance and economy on all your installations. Write TACO HEATERS, INCORPORATED, 1160 Cranston Street, Cranston 9, R. I.

TACO

SERVING THE HYDRONIC INDUSTRY SINCE 1920

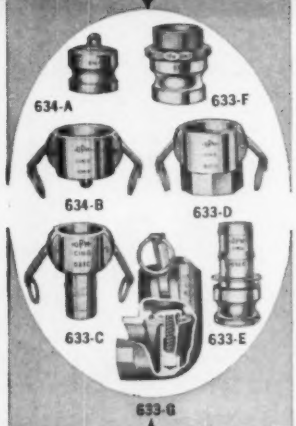
Fuel oil & oilheat

OPW KAMLOK
QUICK COUPLERS

OPW CORPORATION
CINCINNATI 25, OHIO

SLIPS ON
CAM TIGHTENS
HOLDS TIGHT
NEVER FAILS

The Fastest, Safest, Surest Coupling Known



OPW KAMLOK
BRONZE • ALUMINUM • MONEL
STAINLESS STEEL • SEMI-STEEL

ALL STYLES OF ADAPTORS FIT IN ALL STYLES OF COUPLERS OF THE SAME SIZE.
Perfectly tight, no leak connection in seconds. Kamloks couple and uncouple instantly regardless of "hook-up".
Write for Free Bulletin F-10R

OPW CORPORATION
2723 Colerain Ave., Cincinnati 25, Ohio
Phone: Kirby 1-5400

Westchester OHI announces Appointment of Exec. Secy.

THOMAS P. CAMPBELL, formerly with Mobil International Oil Co., a divison of Socony Mobil Oil Co., has joined the Oil Heat Institute of Westchester, as executive secretary

Campbell started his business career in 1933 with the B. F. Goodrich Co. He joined Socony Mobil in 1937 and until his recent resignation was engaged in employee relations work.

Maine Group sponsors School for oilburner Servicemen

THE MAINE OIL & HEATING Equipment Dealers Association is again holding its annual oilburner service school.

The two-week school, which began August 8, is designed for new employees but has been found useful as a refresher course for more experienced men. The course concentrates on basic electricity for the first week and on controls, installation and trouble shooting for the second. Registrants may enroll for either or both weeks at a cost of $25 per week.

New President is elected by Fluid Controls Institute

FRED E. WELDON, General Controls, Skokie, Ill., was elected president of the Fluid Controls Institute, Inc. Other officers elected were: Robert F. McCormick, Automatic Switch Co., 1st vice-president; Eric A. Bianchi, Mason-Neilan Div. of Worthington Corp., 2nd vice-president; Paul K. Rogers, Jr., Skinner Chuck Co., treasurer; Samuel J. Reid, Barnes & Jones, Inc , corporate secretary; and E. R. Rath, Fluid Controls Institute, executive secretary.

The membership of the Fluid Controls Institute consists of manufacturers of automatic regulator valves, control valves, solenoid valves, safety and relief valves, space heating specialties, steam and gas traps and steam heating pumps.

PetroMiser 20
FREE TEST!
worth $56.25

HALF A BILLION GALLONS OF PROOF!

STEWART-HALL's amazing additive eliminates 90-100% of all soot.
Keeps tanks and lines sludge free.
Inhibits tank corrosion.

Now YOU can learn why PetroMiser dealers say:

Joseph Goldenberg
Superfine Fuels, Philadelphia, Pa.
"Service calls cut 36.6%, from 3.55 to 2.25 calls per customer . . . emergency service personnel cut from eleven to six."

Michael J. Verman
Merit Oil Heating Corp., Mt. Vernon, N. Y.
"PetroMiser cut emergency service overtime by $8.65 per week per man."

Herman Mendell
Sparta Coal & Oil Co., Sparta, N. J.
"Emergency service calls cut 34% . . . summer tune-ups per day increased 50%."

John Ziehler
Producers Oil Co., Dayton, Ohio
"Vacuum cleaning almost eliminated—cut 95%."

W. Gregory Maue, Jr.
Maue Oil Co., Ossining, N. Y.
"Decreased service calls have meant increased time to upgrade burners . . . do additional installations."

John Hynes
Automatic Heating Corp., Boston, Mass.
". . . Service call reduction in excess 20%."

Test PetroMiser for yourself NOW. Start full program this winter. This free offer limited to qualified dealers in areas where franchises are open. Write: state gallonage and territory covered.

4 fact-filled booklets on request. Write Dept. F-9

STEWART-HALL CHEM CORP.
MOUNT VERNON, NEW YORK

PLANNING & DEVELOPMENT

PRODUCTION

SPARTAN
NO
SHORTCUTS

TESTING & INSPECTION

PACKING & SHIPPING

Thoroughness is our keynote. In development, production, inspection and shipping, every Spartan product is handled with the kind of care that comes from pride in our product. To us, and to you and your customers, the name Spartan means "the best products of their kind."

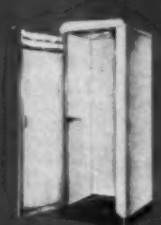
Write for illustrated literature

SPARTAN

SPARTAN SHOWER STALL CO., INC.
SPARTAN CONVECTOR CO., INC.
SPARTAN ELECTRIC RADIATOR CORP.
32-55 74th ST. • MASPETH 78, N.Y.

SPARTAN
Convectors

SPARTAN
Electric Radiators

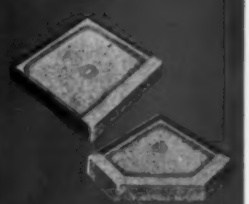


SPARTAN
Shower Stalls

SPARTAN
Baseboard

SPARTAN
Electric Baseboard

SPARTAN
Glass Shower
& Tub Enclosures



SPARTAN
Shower Receptors

THAT EXTRA SOMETHING!

NEUTRODA

THE ONLY FUEL OIL NEUTRALIZER THAT WORKS 2 WAYS

1. *Destroys odor at its source.*
2. *Actually neutralizes fumes.*

POWDER or SPRAY
(Both in 16 oz. containers)

LARGEST SELLING FUEL OIL NEUTRALIZER IN THE WORLD

Cleans & Restores Contacts on Oil Burner, Air Conditioning and Gas Controls, etc.

LIQUID BURNISHER

Such as: Relays, solenoids, breakers, thermostats, etc.

MAGNE PATCH

A POWERFUL MAGNETIC EMERGENCY TOOL

- *Stops oil tank leaks in seconds!*
- *Can be used over and over again!*

Try these TANKIT products too!

TANKTEX — Water finder in oil.

TANKIT — Strap on seal for leaky oil tanks.

EEZ-IT — Heavy duty penetrating oil.

SURGEX — Concentrated boiler water conditioner in small vial.

THE TANKIT CO., INC.
560 BELMONT AVENUE
NEWARK NEW JERSEY

Philadelphia Group elects Officers; appoints Committees

RECENTLY ELECTED officers of the Greater Philadelphia Fuel Conference were announced by that group. They are: W. D. Williams, J. E. Kunkel, president; J. H. Nagel, Jr., J. H. Nagel & Son, Inc., vice-president; R. M. Gillin, Petroleum Heat & Power Co., vice-president; W. H. McFeeters, J. E. Kunkel, treasurer; and E. E. Esterline, executive secretary.

The group also announced the appointment of chairmen of major committees. These are: Stanley Mann, Keystone Coal & Fuel, Annual Convention and Credit Information Interchange; Ed Schreiber, Philadelphia Coke, Annual Outing & Golf Tournament; Joe Batchelder, Patterson Oil Co., Education; Marvel Wilson, Wilson Coal & Supply, Finance and Budget; Fred Haab, F. C. Haab Co., Fueloil Marketing and Accounting; Shep Waldman, Waldman Oil Corp., Labor Relations and Membership; Joe Skelton, J. J. Skelton & Son, Legislative; Bob Gillin, Petroleum Heat and Power, Membership Meetings; Lee Auslander, Allied Oil Co., Technical and Codes.

Hydronics is Feature on TV Presentation in Baltimore

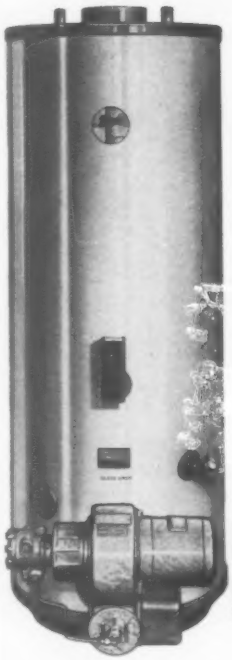
A DISCUSSION of hydronic benefits and the important part hot water heating systems can play in home modernization were highlights of a Baltimore TV interview show, "What's New," on July 14.

Using photo illustrations, Roy A. Bredholt, field operations manager of the Better Heating-Cooling Council, New York, N. Y., told the viewing audience about the complete flexibility of the modern forced hot water heating system for home improvement projects.

Arrangements for the TV interview were made by Joseph Shaner, executive director of the Council in Maryland, who reports that several other interview type TV presentations are being planned to alert and educate the consumer public to the advantages of modern hot water heating.

Glass Lined

OIL WATER HEATERS



THREE SIZES
30
50
70
GALLONS STORAGE

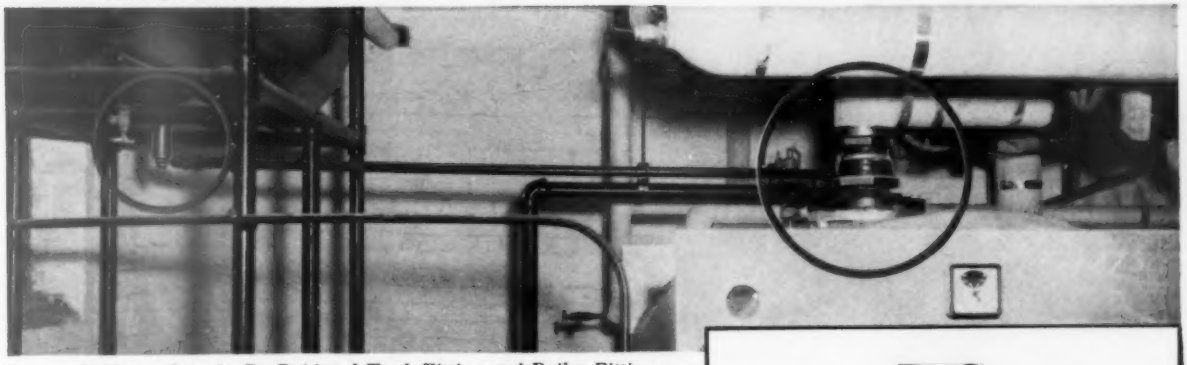
● A size to meet every requirement. Uses pressure burner, number 2 oil and sells at popular prices. Has every feature for volume sales.
Made in large commercial sizes for schools, hotels, hospitals and public buildings. Approved for 180 degree outlet water.
Details on request.

Bock Corporation
110 S. DICKINSON ST., MADISON 4, WIS.

Shirley Park Apartments, Arlington, Va.

"AS IF BY MAGIC, AIR TROUBLES VANISHED"

writes user of B&G Airtrol System



Circles enclose the B&G Airtrol Tank Fitting and Boiler Fitting.

Mr. Daniel C. Long

"Mr. Edwin B. Tidd,
Mgr. of Field Research,
Bell & Gossett Company

"Dear Mr. Tidd:

"We have been plagued by air in the top floor radiators throughout the projects we manage. Bleeding relieved the condition temporarily, automatic vents helped in some cases; however, complaints continued to pour in and our engineers worked around the clock without being able to correct the condition.

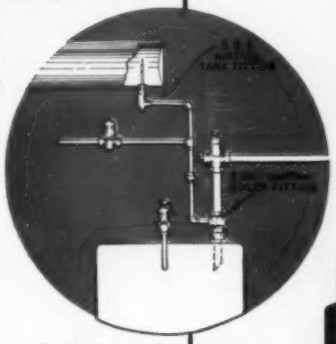
"By chance, we read an advertisement of your 'AIRTROL.' Knowing that any Bell & Gossett product can be purchased without the slightest doubt of its representation, we had the Airtrol installed on three new boilers in a section under construction. We have been free of heat complaints in the new section.

"After one year, we installed three Airtrols on the boilers serving buildings in older sections where complaints were heaviest. The results were beyond belief; as if by magic, our troubles vanished.

"This letter is to thank you, your great organization, and Mr. Curt Sundell, your most efficient representative here, for the complaint-free heating season where the Airtrols are installed.

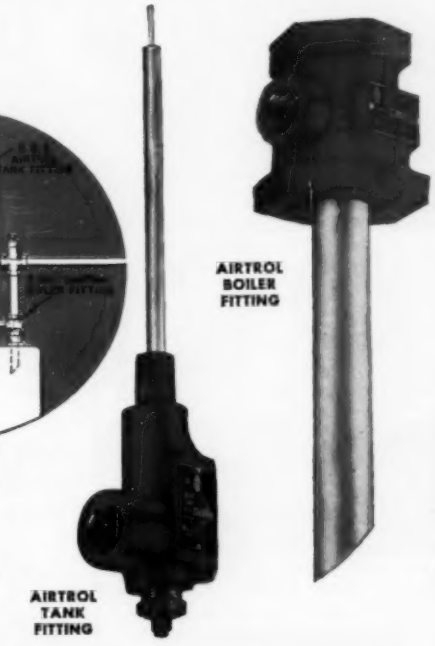
"Thirty-five boilers heating the projects which we manage will be equipped with Airtrols this summer.

Very truly yours,
M. T. BROYHILL & SONS CORP.
(*signed*) Daniel C. Long, C. E.
Property Management Consultant"



B&G Airtrol System installed on top outlet boiler.

B&G AIRTROL® SYSTEM



B&G Airtrol Systems are GUARANTEED to end air troubles in forced hot water systems

BELL & GOSSETT
COMPANY
Dept. CI-7, Morton Grove, Ill.

Canadian Licensee: S.A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ont.

fuel oil & oil heat

1 PACKAGE FOR FASTER FILLING

PHILLY
RAPID-TITE
Fuel Oil Delivery System

PHILLY *RAPID-TITE* DIVISION
PLASTIC AND APPLIANCE CO., INC.
5311 WESTMINSTER AVE. PHILA. 31, PA.

MAIL TODAY

SHOW ME!

Name _____

CO. _____

Street _____

City _____ State _____

OHI of Oregon announces new Slate of Officers and Directors

THE ANNUAL MEETING of the OHI of Oregon was held at the Marion Hotel in Salem on June 17. Part of the business before the meeting was the election of board members. The directors for the coming year are: District 1, Bob Inman; District 2, Jim Coon; Ken Goodall, Roy Rockwell, and Scott Partridge; District 3, Howard Smalley; District 4, Ray Borger; District 5, Bud Brown; District 6, Don Mitchell; District 7, Jim Cahill; District 8, Joe Young; District 9, Gary Hilden.

New officers were later elected by the board. They are: Bob Inman, president; Jim Coon, vice-president; Ken Goodall, secretary; Roy Rockwell, treasurer Al Loucks, the retiring president became chairman of the board.

Conn. Group elects Officers; service School will expand

THE BETTER Home Heat Council, Inc., of Hartford, Conn., announces the re-election of Council officers. They are: Bill Brucker, president; Irwin Singer, vice-president; Robert Lynch, Jr., secretary; and Dewey Good, treasurer.

Space is being provided for an oil-burner service and installation course, now conducted at the Hartford Trade School, at a new and greatly enlarged Regional Technical School now under construction in Hartford, Bob Lynch, secretary of BHHC, reveals.

New Indoor Comfort Bureau sponsored by Warm Air Group

OFFICIAL LICENSING of the latest Indoor Comfort Bureau, sponsored by the National Warm Air Heating and Air Conditioning Association, took place at a civic dinner meeting July 21 at Cedar Rapids, Ia. A featured speaker was the U. S. Senator from Iowa, Bourke B. Hickenlooper.

Officers of the new Bureau are: E. H. Gundling, president; Kenneth Mills, vice-president; M. J. Ilten, secretary; and Adolph A. Helm, treasurer.

(*Please turn to page 132*)

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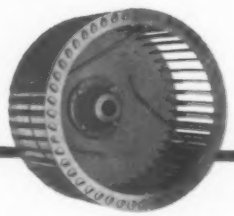

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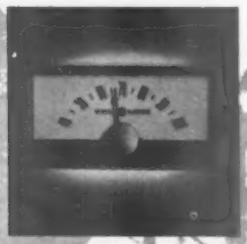

Straight-line Thermostat

Master Controls

Remote-mounting Master Controls

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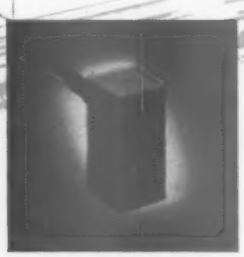

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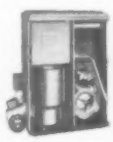
Oil Fired Basement Type Winter A. C. Units



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It was a good Season

Annual Investigation of fueloil Dollars, Profits and Methods finds plenty of Problems, and also the Cash to tackle Them

by Robert Gray

THE OILHEATING season of 1959-60 was moderately disappointing from a price and profit angle, but still it was one of the best years that the industry has seen. The volume of product sold was the highest by a narrow margin, and, of course, the number of oilheating customers was more than 3% above any other season. This rate of gain does not compare with that of the mid-fifties, but it showed some improvement over the season just previous.

Prices of distillate heating oil were down by an average of 4.3% between the start of the season and its close. Margins fared better, but they dropped an average of 2.4% between July of last summer and this summer.

Operating costs were up 1% with the result that net profits before income tax per gallon of distillate sold were down 10%. However, fueloil was still a very fine business this past season because net profits before income tax represented 8.4% on the total billing of the several hundred companies reporting for this annual study.

Apparently, it is not possible in any industry for prices, margins and profits always to rise, but certainly the fueloil industry has been able to count on sustained profits, counting the good and bad years, considerably better than most industries.

In the later part of this article, you will find considerable detail on the dollars and cents of fueloil distribution last season.

The sample this year was not quite as well balanced as in other recent years. This does not affect the validity of the individual figures since everything is weighted to accommodate the known market level of each section of the country, each city size group, and other common industry denominators.

You'll notice in TABLE 1 that the number of cooperating companies is greater than the actual market percentage in all sections except the Mid-Atlantic where it is considerably smaller. This resulted from our asking more dealers in the other sections to participate because in former years our numbers had been relatively lightest from the Midwest and the South.

In the next portion of the table, we see the company pattern in relation to products sold. They all sell No. 2 fueloil because that is the first qualification in their being selected to help in this study.

The bottom of this table shows the company sizes and their percentages which are just about what you would expect. We are obviously light on the

TABLE 1

Sample Compared to Market

	BY NUMBER — OF CUSTOMERS —		
	Total Co's	*Their Share*	*Actual Market*
New England	19%	18%	17%
Mid-Atlantic	26	24	40
South Atlantic	9	14	6
Midwest	35	29	28
Pacific N. W.	11	15	9
Totals	100%	100%	100%

	This Percent of Companies
Sells No. 2 Fueloil	100%
Kerosene, No. 1	79
Sells No. 4 or No. 5 Residual	28
No. 6 Residual	17
Sells Gasoline	37
Coal	20
Sells Oilheating Equipment	60

Size of Companies

Number of Customers	*Percent of Companies*	*Percent of Total Volume*
Under 500	30%	5%
500 to 999	28	12
1 000 to 1.999	24	21
2 000 to 3 999	11	18
4,000 and Over	7	44

TABLE 2

Fueloil is 67% of Group's Dollar Volume

	Fueloil	*Heating Cooling Equipment*	*Burner Service*	*Coal*	*Gasoline*	*Other*
NEW ENGLAND						
Large Cities	72%	13%	10%	1%	..	4%
Medium Cities	79	7	6	2	5%	1
Small Cities	78	5	1	5	10	1
All Cities	76	9	6	3	5	1
MID-ATLANTIC						
Metropolitan New York	76	6	11	2	4	1
Other Large Cities	71	9	7	7	3	3
Medium Cities	57	10	6	6	11	10
Small Cities	41	2	1	15	29	12
All Cities	66	7	8	6	9	4
SOUTH ATLANTIC						
Medium-Large Cities	86	2	1	4	3	4
Small Cities	40	5	3	1	51	..
All Cities	72	3	2	3	17	3
MIDWEST						
Large Cities	57	2	3	10	26	2
Medium Cities	64	3	3	8	22	..
Small Cities	45	4	1	1	48	1
All Cities	56	3	2	7	31	1
PACIFIC NORTHWEST						
Large Cities	90	1	4	3	2	..
Medium Cities	73	8	7	7	2	3
Small Cities	90	1	1	2	1	5
All Cities	85	3	4	4	2	2
U. S. ALL CITIES	67%	6%	5%	5%	13%	4%

smallest sized companies, but that is because so many of the smallest fueloil operators are in other lines of business and are less inclined to help on such market analysis.

Fueloil distributors participating in this study, who are quite representative of the industry as a whole, had 67% of their total dollar volume in the sale of fueloil. TABLE 2 shows this in detail. Notice that there is a separation among cities of three sizes. In the pages that follow quite a number of the tables will show this separation. A small city is one with population of 25,000 or under. A medium city has between 25,000 and 250,000; the large city is above 250,000.

Of course, where a small city is a suburb of a large one we consider it a part of the large metropolitan area.

You'll notice in the table that heating and cooling equipment plus burner service accounted for 11% of the dollar volume, coal 5%, gasoline 13% and miscellaneous items 4%. This included, typically, plumbing, hardware and appliances.

The smaller cities are more inclined to include gasoline and coal in the dealer's volume than are the larger places. In two categories, the small cities of the Midwest and South, gasoline represented actually a larger dollar volume than fueloil.

The influence of oil men in the sale and servicing of oilheating equipment shows up in TABLE 3. Three-fifths of the companies reporting in this survey sell oilheating and three-fourths of them service it.

Again, there are important regional differences with the Northeastern states strongest and the Midwest the lightest in this category. Changes in the total figures as shown between this year and last are not significant since there would be minor fluctuations of that sort between the participating companies.

It is particularly desirable that we get a higher per cent of the Midwestern companies active in this phase of the business because it is the one best way to build and hold oil volume.

Three-fourths of the companies in this study operate their own bulkplants. As in earlier years, the lowest percentages are in the coastal areas where much of the business is handled through large tidewater plants that require too big an investment.

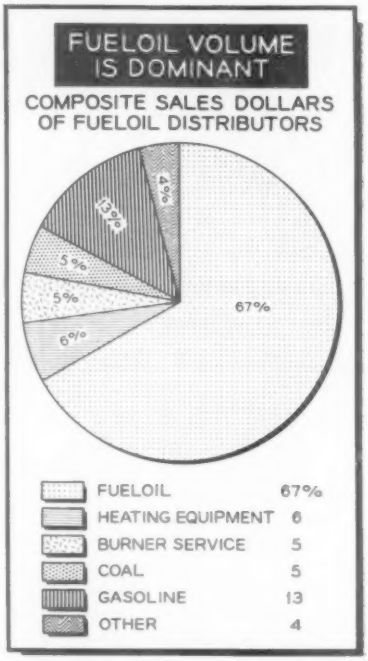


TABLE 3
Oil Men Sell, Service Oilheating

	Percent Who Sell Oilheating	*Oil Companies' Share of All Installations*	*Percent Who Service Oilheating*	*Oil Companies' Share of All Service*
NEW ENGLAND				
Large Cities	80%	82%	90%	89%
Medium Cities	87	62	87	85
Small Cities	59	53	65	64
All Cities	76	69	82	81
MID-ATLANTIC				
Metropolitan New York	79	82	95	88
Other Large Cities	88	78	94	83
Medium Cities	79	43	78	73
Small Cities	52	45	86	67
All Cities	77	60	91	76
SOUTH ATLANTIC				
Large-Medium Cities	53	40	59	29
Small Cities	50	14	75	31
All Cities	52	35	64	30
MIDWEST				
Large Cities	27	33	49	50
Medium Cities	48	15	66	30
Small Cities	26	12	30	12
All Cities	33	22	48	34
PACIFIC NORTHWEST				
Large Cities	42	77	75	80
Medium Cities	58	46	92	51
Small Cities	50	31	67	53
All Cities	49	56	78	64
1960 ALL SECTIONS	60%	53%	75%	63%
1959 ALL SECTIONS	61	56	70	64

The typical usage of a bulkplant shows a wide variation as seen in TABLE 5. In the New England and Mid-Atlantic areas there is a fairly consistent pattern of storage capacity turnover running from 10 to 13 times in a season. This figure comes from simply dividing the annual sales by the shell capacity of the bulkplant.

The South Atlantic has a rate of turnover about twice as great, largely because of the open winters. The Midwest has the lowest turnover rate caused by the well known variation in industry practice.

The Pacific Northwest turnover rate of 72.6 times per season is realistic, but their industry practices are very different from other areas. Most of the marketers in the population centers have small relay or emergency tanks. They continue to draw off much of their product directly from the ocean terminals of major companies. Then there is a growing distributor practice of having just enough storage capacity for a couple of day's needs and replenishing it each night by transport from tidewater.

This is a good time to mention, in connection with dealer activities, the sale of oil-powered water heaters which we have not previously covered in our summer analysis. These are the water heaters with mechanical burners for

No. 2 oil. The sale is still much too limited considering their merits, but they do seem to have made some headway in the Northeastern section of the country, as shown in TABLE 6. These water heaters with one gallon firing rates produce hot water at about four times the speed of a typical gas heater, although they do cost more than twice as much to install.

An activity of considerable interest during the past heating season and for several years back has been the participation of fueloil distributors in local advertising campaigns for oilheating sponsored and assisted by the National Fueloil Council.

In TABLE 7, we show in the first two columns the activity of the companies in their own private advertising. In the third and fourth columns, you will see the penetration of cooperative campaigns. On private advertising, nearly all companies in every region are doing some of it on a pretty broad scale. You'll notice that they spent for private company advertising in the past heating season an average of $1.87 per fueloil customer on their books. In other words, the company with 1,000 customers spent $1,870.

Cooperative Campaigns grow

In the cooperative campaigns, 57% of the reporting companies are participating at the local level. They spent an average of 37¢ per oil customer as their share of these campaigns. This figures to about $250 per million gallons which is the most common pattern.

In the nation as a whole, there are 70 local campaigns east of the Rockies, plus numerous others in the Pacific Northwest. The total investment in these campaigns for the calendar year will be upward of $2,500,000 with the refiners supplying half to match the marketers' half.

When the reporting group was asked its opinion of the effectiveness of the campaigns, 74% of all the companies believed that they are doing some real good. The other 26% was divided in several ways between those who do not think they are useful and those who have no opinion.

The regional differences here are important because they pretty much parallel the activity in local programs.

TABLE 4
Three-Fourths have Bulk Plants

	No. 2 Oil	No. 1 Kero	Residual
New England	59	37	9
Metropolitan New York	72	39	17
Other Mid-Atlantic	78	59	12
South Atlantic	99	96	8
Midwest	89	85	5
Pacific Northwest	64	55	16
1960 All Sections	77	61	11
1959 All Sections	74	62	9
1958 All Sections	72	64	8

TABLE 6
Oil powered Water Heaters

	Percent of Companies Selling	Number Installed 1959-60 Season
New England	69%	12,586
Mid-Atlantic	54	19,615
South Atlantic	24	444
Midwest	14	1,829
Pacific Northwest	1	24
All Sections	39%	34,498

TABLE 5
Storage Turnover Varies Widely

	No. 2 Oil Turnover of Storage Capacity
New England	10.8 times
Metropolitan New York	13.3 times
Other Mid-Atlantic	10.2 times
South Atlantic	21.0 times
Midwest	6.0 times
Pacific Northwest	72.6 times

What does service cost?

	Average Spent per Customer for Service 1959-60 Season
New England	$15.75
Mid-Atlantic	25.11
South Atlantic	18.93
Midwest	14.28
Pacific Northwest	18.69
All Large Cities	21.94
All Medium Cities	16.20
All Small Cities	15.41
1960 All Cities	19.54
1959 All Cities	20.44

TABLE 7
More Companies Cooperate in Advertising

	— COMPANY ADVERTISING —		COOPERATIVE ADVERTISING CAMPAIGNS	
	Percent of Companies that Advertised	Avg. spent by them per Customer	Percent of Companies Participating	Avg. spent by them per Customer
New England	96%	$2.43	66%	$0.42
Metropolitan New York	95	1.27	74	0.25
Other Mid-Atlantic	92	1.45	39	0.35
South Atlantic	99	1.59	79	0.30
Midwest	94	2.12	42	0.39
Pacific Northwest	97	2.43	80	0.58
1960 All Sections	95%	$1.87	57%	$0.37
1959 All Sections	95	1.90	52	0.37
1958 All Sections	88	1.93	48	0.35

In New England, the favorable vote is 93%; in Metropolitan New York, 74%; in other Mid-Atlantic states, 70%; in the South Atlantic, 87%; in the Midwest, 58%, and in the Pacific Northwest, 92%.

Gas heating is out-selling oil heat in number of installations, although oil continues to be the leading fuel in Btu of energy consumed. In the new installations currently being made, gas is selling about two jobs to our one. TABLE 8 shows the detail on this in addition to showing the estimated differences in fuel cost. Oil is considerably cheaper up and down the East Coast, but gas is cheaper as you move West. At the same time, the fuel cost is far from the whole story since the degree of sales promotion is a stronger factor in the customer's decision.

Oil continues to lead gas in new installations in the New England states and in the South Atlantic. This latter group covers the states on the Atlantic Seaboard only, the other southern states extending all the way to California strongly favor gas because it is very cheap and the winters are mild.

In TABLE 9, we get some reflection of this competitive fuel picture although that is not the principal emphasis in the table. We are mostly concerned here about the rate of customer turnover. In the past, when we have asked the companies for their percentage of account turnover there has been little uniformity in their interpretations. Some companies will consider a customer who moved from one location to another as a drop and an addition. Again some would consider no loss of a customer if one moved away and they got the new occupant of a house. This time we simplified the question by asking them to consider a

loss as any customer actually dropped from their books.

For the country as a whole the ratio is 6.4% of customers actually cancelled during the season. That means that before they could grow, they had to overtake that 6.4% loss. In the second column, we show that during the season the volume of oil sold increased 2.6% for the nation as a whole with very important differences through the sections.

This means that the new accounts added by the typical distributor covered the 6.4% loss plus the 2.6% final increase in gallons delivered. To refine this one step further, in the third column we have made an adjustment for the difference in degree-days between the two seasons.

Growth vs. Degree-days

Thus, the actual growth rate in gallons which could represent new net growth in business was 2.2% for the nation. You'll notice some great differences between individual comparisons in the last two columns.

For example, the large Pacific Northwest cities showed a gallonage increase of 8.2% this past season, but there was a large adjustment in degree-days so that the real score was a loss of 0.9%.

In TABLE 10, we see that the average dealer in the reporting group has 1,586 customers for No. 2 oil including residential and the small commercial or apartment customer burning that fuel. This is slightly below last year's similar study when the average was 1,601 customers.

On the products other than No. 2 oil, it is important to notice that the figures shown represent only those companies that sold the particular product. In other words, we did not apply the Kerosene or residual customers to the whole group of dealers, but only to the ones active in that field.

In the lower part of the table, we see that the average No. 2 oil account, for residences, consumed 1,495 gallons last season; when we include the small commercial and apartment users of No. 2 fueloil, the average goes up to 1,623.

For residual fuels—Nos. 4, 5 or 6—we show only a national average rather than sectional figures because the local differences are too great to be considered representative.

TABLE 8
Nationally, Oil Cost 6% Less than Gas

	GAS COSTS		RATIO OF NEW INSTALLATIONS		
	More	*Less*	*Oil*	*Gas*	*Elect.**
NEW ENGLAND					
Large Cities	24%	..	40%	60%	..
Medium Cities	18	..	51	49	..
Small Cities	13	..	72	28	..
All Cities	19	..	53	47	..
MID-ATLANTIC					
Metropolitan New York	23	..	29	71	..
Other Large Cities	22	..	15	85	..
Medium Cities	17	..	29	71	..
Small Cities	8	..	40	60	..
All Cities	16	..	27	73	..
SOUTH ATLANTIC					
Large-Medium Cities	17	..	76	21	3%
Small Cities	13	..	74	23	3
All Cities	15	..	75	22	3
MIDWEST					
Large Cities	..	18%	16	84	..
Medium Cities	..	21	19	81	..
Small Cities	..	6	29	71	..
All Cities	..	15	21	79	..
PACIFIC NORTHWEST					
Large Cities	..	9	37	58	5
Medium Cities	..	7	25	47	28
Small Cities	..	5	38	55	7
All Cities	..	7	34	54	12
1960 ALL SECTIONS	6%	..	34%	65%	1%

* Dealers were not asked about electric heat, but in the South Atlantic and Pacific Northwest they filled it in. If we had asked the question, electric heat would have shown about 5%, with oil about 32% and gas 63%.

TABLE 9
Customer Losses and Gains

	Accounts Dropped from Books	*Seasonal Fueloil Volume Increase*	*Increased Gallonage Adjusted for D-D*
NEW ENGLAND			
Large Cities	6.1%	1.8%	3.9%
Medium Cities	8.6	(—1.5)	0.6
Small Cities	2.8	6.8	9.0
All Cities	5.9	2.3	4.4
MID-ATLANTIC			
Metropolitan New York	6.4	(—0.8)	3.4
Other Large Cities	6.2	1.5	5.7
Medium Cities	5.3	3.0	7.3
Small Cities	3.3	1.0	5.2
All Cities	5.7	0.6	4.8
SOUTH ATLANTIC			
Large-Medium Cities	5.3	8.8	2.9
Small Cities	2.8	9.8	3.9
All Cities	4.6	9.1	3.2
MIDWEST			
Large Cities	6.6	2.9	(—1.5)
Medium Cities	5.4	3.0	(—1.4)
Small Cities	7.3	2.3	(—2.1)
All Cities	6.5	2.8	(—1.6)
PACIFIC NORTHWEST			
Large Cities	16.3	8.2	(—0.9)
Medium Cities	9.4	9.5	0.3
Small Cities	6.9	3.1	(—5.6)
All Cities	11.4	7.1	(—1.9)
ALL SECTIONS	6.4%	2.6%	2.2%

Getting into the economic part of our study, we find first in TABLE 11 a schedule of driver wage rates by sections and by city sizes. We also show the growth pattern through eight years. There have been a few notches in the curve such as we see this year, but in general it is a steady upward progression.

For example in large cities, the hourly wage of best men is up 35% in the eight years; and for the lower

grade men of those same cities, the eight-year increase has been 43%. It is important to notice what this table actually means. When we show, for example, high and low rates in the large city group, we are not simply recording the highest and lowest figures reported in the study; instead, each company gave us its own high and low rate and we averaged all of the high ones and all of the low ones within each group.

One thing that gives you confidence in the future of the fueloil industry is the degree of realism among its members. We noted at the start of this writing that margins and profits were down moderately from the previous season, and yet we find in TABLE 12 that an increasing per cent of the companies say margins today are about right.

What they mean, obviously, is that in view of present oil prices and the growing pressure of gas and electric competition they are pleased to have margins as good as they are. In fact, 4% of the reporting companies say that margins are too high, while only 18% say they are too low.

Naturally, anyone in business wants all the margin he can get within the range of horsesense, but these people are voting a high level of confidence in the economic soundness of the suppliers that set the margins.

The traditional TABLE 13 reports the cost and profit picture of the several hundred companies that supplied the figures. As we mentioned at the start, there is a little shrinkage in both margins and profits from the season before.

The only point in the upper part of the table that might be obscure is that margins without bulkplants averaged the same as margins with bulkplants. The figures don't tell the whole story.

On the East Coast, which is our highly concentrated oilheating area, many of the largest fueloil distributors do not have bulkplants. In fact, some companies without bulkplants operate upwards of two dozen retail trucks. They get price deals of one kind or another because of their large volume and this was particularly true during the past season when so much surplus oil was around.

In the Midwest, on the other hand, the company without a bulkplant is usually a commission agent operating out of a plant owned by a major company. He may or may not carry the accounts, but in general his principal function is to get customers and operate a truck. Since he does not do the whole job of marketing, his margins have always been much lower than other types of operators.

The lower portion of TABLE 13 shows margin detail by all regions and city sizes.

The average fueloil truck served 362 customers the past season. In the large cities, it served 399. TABLE 14 shows the number of trucks operated by the fueloil distributors in the survey. The total per company was 6.2 trucks. Notice in the last column that if you add the four types of trucks the total would be 10 instead of 6.2. For the total figure we simply took the number of tank trucks and divided them by the

TABLE 12

Margins are O.K. say 78%

PERCENT OF COMPANIES SAY THEY ARE

	About Right	*Too High*	*Too Low*
NEW ENGLAND			
Large Cities	100%	..	..
Medium Cities	81	14%	5%
Small Cities	86	6	8
MID-ATLANTIC			
Metro. New York	68	..	32
Other Large Cities	75	..	25
Medium Cities	57	7	36
Small Cities	67	5	28
SOUTH ATLANTIC			
Large-Med. Cities	63	..	37
Small Cities	56	..	44
MIDWEST			
Large Cities	78	3	19
Medium Cities	79	5	16
Small Cities	81	4	15
PACIFIC NW.			
Large Cities	92	8	..
Medium Cities	83	..	17
Small Cities	100	..	..
ALL SECTIONS			
Large Cities	80	2	18
Medium Cities	73	6	21
Small Cities	79	4	27
All Cities 1960	78%	4%	18%
All Cities 1959	68	4	28
All Cities 1958	69	2	29

TABLE 10

1,586 Average Customers per Dealer, No. 2 Oil

	New Eng.	*Metro. N. Y.*	*Other Mid-Atl.*	*South Atl.*	*Mid-West*	*Pacific N. W.*	*All Sec.*
No. 2 Residential	1,514	1,748	1,219	1,511	1,246	2,582	1,512
No. 2 Com'l-Apt.	143	41	42	107	75	59	74
Kero, No. 1	196	111	165	685	321	382	255
No. 4-5 Residual	136	18	14	6	29	92	46
No. 6 Residual	130	19	3	20	25	19	36

Average Consumption

GALLONS PER CUSTOMER—SEASON 1959-60

	New Eng.	*Metro. N. Y.*	*Other Mid-Atl.*	*South Atl.*	*Mid-West*	*Pacific N. W.*	*All Sec.*
Residential No. 2	1,667	2,067	1,496	1,168	1,224	1,081	1,495
Com'l-Apt.. No. 2	4,485	5,980	4,335	2,802	3,670	2,895	4,249
Comb. Types, No. 2	1,910	2,157	1,591	1,276	1,363	1,122	1,623
Kero. No. 1	653	802	851	819	938	819	828
No. 4-5 Oil							30,238
No. 6 Oil							78,345

TABLE 11

Little Change in Driver Wages

	LARGE CITIES		MEDIUM CITIES		SMALL CITIES	
	Best Men	*Lowest*	*Best Men*	*Lowest*	*Best Men*	*Lowest*
New England	$2.21	$2.05	$1.99	$1.75	$1.85	$1.69
Metropolitan New York	2.48	2.22	..	..	..	..
Other Mid-Atlantic	2.16	2.02	2.04	1.81	1.73	1.62
South Atlantic	1.95	1.42	1.83	1.22	1.57	1.38
Midwest	2.63	2.46	2.26	2.10	1.98	1.82
Pacific Northwest	2.93	2.53	2.48	2.44	2.20	2.07
1960 All Sections	2.41	2.19	2.14	1.92	1.88	1.74
1959 All Sections	2.42	2.20	2.09	1.86	2.00	1.85
1958 All Sections	2.28	2.18	1.98	1.79	1.82	1.67
1957 All Sections	2.21	2.05	1.90	1.68	1.73	1.56
1956 All Sections	2.14	1.98	1.93	1.68	1.75	1.56
1955 All Sections	1.91	1.72	1.70	1.49	1.65	1.36
1954 All Sections	1.97	1.80	1.75	1.65	1.77	1.62
1953 All Sections	1.78	1.47	1.53	1.37	1.58	1.49

number of companies since naturally not all companies would have separate trucks for kero, or residual or transports.

Lower in the table we see that the average delivery of No. 2 oil was 201 gallons with moderate differences between city sizes, but considerable differences between different sections of the country. This is largely influenced by average tank sizes as shown in TABLE 15.

It has been three years, since we checked the tank sizes, but the changes in that period have been relatively minor. The overall average of 363 gallons compares with 376 in 1957.

Tanks with sizes below 200 gallons have shown up in several spots this year which is rather surprising.

It has been several years since we checked sizes of fueloil trucks, but there has been enough inquiry to justify it. TABLE 16 shows this in very considerable detail. The last column shows the average size in the indicated area of all trucks operating. This does not include semi-trailers. The overall average keeps going up all the time and now stands at 1716 gals.

TABLE 13

Costs and Profits by Regions

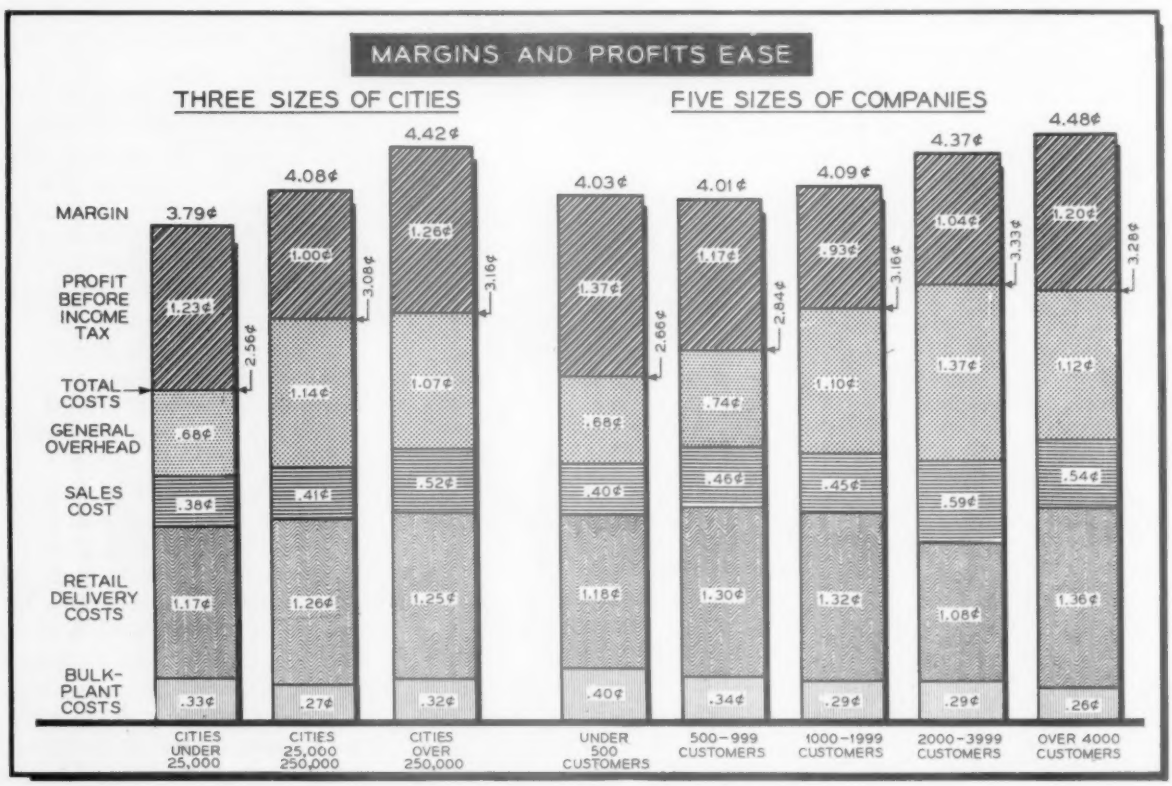
Cents Per Gallon	New Eng.	Metro. N. Y.	Other Mid-Atl.	South Atl.	Mid-West	Pac. N. W.	All Sec.
Bulkplant Cost	.42	.32	.17	.33	.41	.18	.31
Delivery Cost	1.28	1.32	1.13	.95	1.34	1.38	1.23
Selling Cost	.44	.49	.40	.33	.48	.56	.45
General Overhead	1.07	1.22	1.07	.65	.70	1.60	.97
Total Cost	3.21	3.35	2.77	2.26	2.93	3.72	2.96
Margin with Bulkplant	4.40	4.54	3.89	3.58	4.16	4.25	4.13
Profit	1.19	1.19	1.12	1.32	1.23	1.18	1.17
Margin without Bulkplant	4.68	5.02	4.06	..	2.89	5.30	4.13
Profit	1.89	1.99	1.46	..	.37	1.76	1.34

Margins Average Down

	—WITH BULKPLANT—			—WITHOUT BULKPLANT—		
	Large Cities	*Medium Cities*	*Small Cities*	*Large Cities*	*Medium Cities*	*Small Cities*
New England	4.41¢	4.63¢	4.16¢	4.67¢	4.43¢	4.94¢
Metropolitan New York	4.54	..	..	5.02	..	..
Other Mid-Atlantic	4.15	4.09	3.35	4.45	3.56	..
South Atlantic		3.74	3.20	..	..	..
Midwest	4.05	4.67	3.82	3.00	2.75	..
Pacific Northwest	4.57	..	5.34	5.24	5.56	5.13
1960 All Sections	4.42	4.08	3.79	4.24	3.65	..
1959 All Sections	4.31	4.26	4.02	4.32	3.99	4.09
1958 All Sections	4.06	4.16	4.02	3.83	..	3.89

Notice, however, the separate small lower portion of the table where the marketers told us what they are going to buy to add to their fleet for the new season. The new ones will average 1999 gals.

A little more than half of fueloil truck drivers now work all year. TABLE 17 shows the ratios. Notice that in the small cities, more than three-fourths of them work all year around because so many of those particular oil men have other product lines. Again, many companies in the



small cities have only one driver and they can't very well lay off the truck entirely.

There has been a growing interest in driver incentive plans. Without giving any detail, TABLE 18 shows the extent to which these are used. Naturally incentive plans are almost impossible in union organizations, so the second column of the table shows the degree of union concentration. Combining the two percentages, we see that just over half the companies have incentive plans or have union crews while the other half has straight time, non-union drivers.

In asking dealers to report on incentives, we made it clear that this did not refer to higher rates for overtime pay, but rather meant increased bonus pay for high performance.

The next several tables refer to the mechanics and refinements of oil delivery. TABLE 19 shows that 74% of fueloil customers are served through automatic deliveries, and it also shows that 65% of customer tanks have some type of fill signal. The third column touches a rather controversial subject. Here we see that just under one-fifth of the companies compute the tickets in the office rather than have the driver do it at the time of delivery.

This is a growing practice and it has had a lot of publicity just lately due to arguments with the Bureau of Weights and Measures in Washington which now seem to have been cleared up satisfactorily.

TABLE 20 measures the acceptance of tight-fill systems in the three principal areas where they are used. There were so few reported from the South Atlantic and Pacific Northwest that we omitted them from the table.

There is some connection between the tight-fills and the use of pumping speeds as shown in TABLE 21. There is no direct correlation as we saw in the report last year, principally because the real gains in delivery output are more closely tied with fast pumping which, of course, requires the tight-fill connection as a basis.

The average pumping speed in all sections of the country is shown in the table to be 52 gallons per minute.

TABLE 14

362 Customers No. 2 Oil per Truck

Trucks Operated Per Distributor	*Large Cities*	*Medium Cities*	*Small Cities*	*All Cities*
No. 2 Oil	4.6	4.6	2.4	4.2
Kero. No. 1 Oil	1.6	1.7	1.3	1.6
Residual Oil	2.1	2.3	1.0	1.9
Over-the-Road Transports	2.8	2.0	1.5	2.3
All Types	6.6	7.0	4.0	6.2
Customers served per truck, No. 2 Oil	399	366	265	362
AVERAGE GALLONS PER DROP				
No. 2 Oil	210	192	192	201
Kero. No. 1 Oil	119	99	82	106
No. 4-5 Residual	2,412	3,325	3,601	2,924
No. 6 Residual	4,290	3,909	4,379	4,194

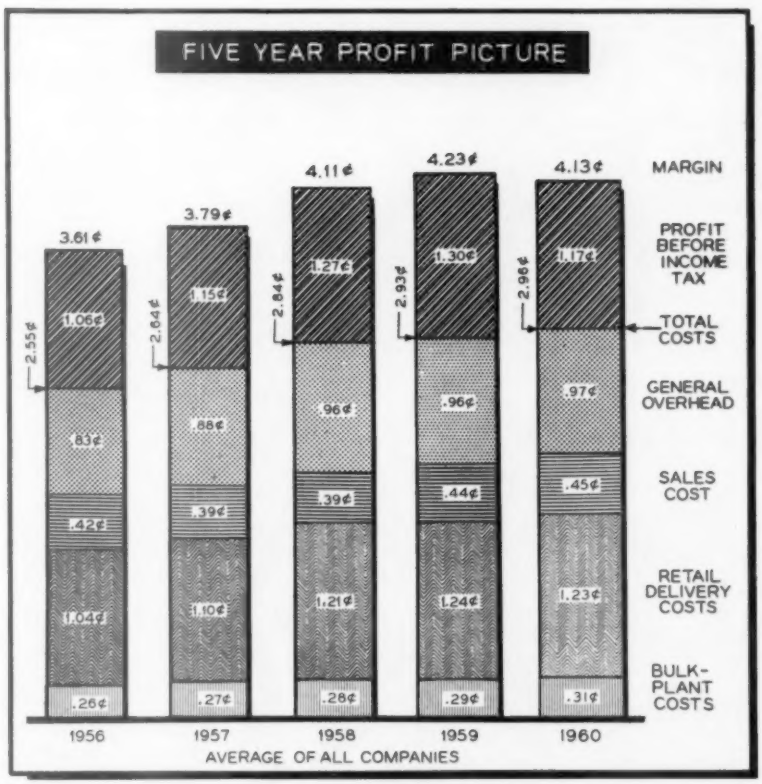
GAL./DROP BY SECTIONS	*New England*	*Mid-Atlantic*	*South Atlantic*	*Mid-West*	*Pacific N. W.*
No. 2 Oil	179	206	208	200	264
Kero. No. 1 Oil	42	124	150	118	77
No. 4-5 Residual	1,952	2,971	1,251	3,626	1,894
No. 6 Residual	3,609	4,498	..	4,785	3,325

TABLE 15

363 gallons Average Tank Size for No. 2 Oil

SIZE IN GALLONS	*New England*	*Metro-politan New York*	*Middle Atlantic*	*South Atlantic*	*Midwest*	*Pacific North-west*	*All Sections*
Below 200*	..	..	..	33%	2%	5%	3%
200-300	87%	69%	83%	36	80	66	76
550	8	20	12	21	12	7	13
675	..	2	..	2	1	19	2
1,000*	5	9	5	8	5	3	6
Gallons Average	338	409	350	346	351	389	363

* Dealers were not asked about sizes under 200 gallons but several listed them.



and this resulted in an average delivery rate of 592 gallons per hour during the month of January. We did not carry this table into as much detail as we might because it was obvious from some of the figures that dealers were not too familiar with their results on this point. However, we can observe that with the so-called high speed pumps operating at 70 gpm and upwards, the January gallons per hour were 629 while those operating at 60 gpm and under averaged 583 gph.

Among the incidental refinements, we find in TABLE 22 that 23% of all fueloil customers now pay their bills by a monthly equalized payment plan. Again we see that 22% of the reporting companies offer budget insurance that will pay the balance of the year's oil bill if the wage earner dies.

Another incidental item shows in TABLE 23 that 44% of the companies use bracket pricing with the strongest emphasis in New England and the Pacific Northwest. By bracket pricing, we mean that their price per gallon changes with larger tank or drop sizes. The most common basis is to reduce the price a half cent where the customer has 550 gallon storage capacity or is in position to take automatic deliveries in 400 gal. drops.

The major oil companies are selling at the retail level 22% of the total No. 2 fueloil volume for heating. This is shown in TABLE 24 by sections. It is rather odd that this figure seems to be declining slightly in view of the fact that the major companies have been buying some of the larger independent fueloil distributors—quite a few in fact.

The only answer would be that they have been dropping direct distribution in areas where they found it uneconomic, plus the fact that the independent distributor with his burner sales and service often has better luck in holding his account and gaining new ones on an individual basis.

The second column shows that 62% of the reporting distributors are showing major brands on their trucks. This is the high point in this measurement in our studies of many years. Perhaps, it ties in with the first column and indicates that as the majors gain more branded distribution they are less inclined to cultivate direct business.

TABLE 16

Size of Fueloil Trucks as Percent of Total Trucks

City Sizes	Under 1000	1000 1499	1500 1999	2000 2499	2500 & Up	Semi-Trailer	Average Regular Truck
	TRUCKS NOW IN USE						
NEW ENGLAND							
Large Cities	..	6%	36%	22%	36%	..	2190
Medium Cities	..	12	24	15	29	20%	2130
Small Cities	8%	34	26	16	10	6	1679
All Cities	2	16	29	19	26	8	2019
MID-ATLANTIC							
Metropolitan							
New York	1	15	29	19	22	14	2018
Other Large Cities	..	29	28	17	11	15	1808
Medium Cities	7	30	19	11	18	15	1771
Small Cities	11	32	19	12	16	10	1700
All Cities	6	27	23	14	17	13	1807
SOUTH							
Large-Medium Cities	9	69	12	7	1	2	1356
Small Cities	6	47	23	15	6	3	1588
All Cities	8	63	15	9	3	2	1426
MIDWEST							
Large Cities	7	34	24	15	6	14	1631
Medium Cities	7	20	36	22	2	13	1708
Small Cities	16	64	6	4	..	10	1247
All Cities	10	39	22	14	3	12	1539
PACIFIC NORTHWEST							
Large Cities	6	38	28	17	6	5	1642
Medium Cities	14	48	21	13	2	2	1456
Small Cities	25	49	9	5	4	8	1296
All Cities	14	44	20	12	4	6	1482
ALL SECTIONS	10	30	24	15	14	7	1716

Their new Trucks will be Larger

	1000 1499	1500 1999	2000 2499	2500 & Over	Average Size
	SIZES THEY'LL BUY THIS SEASON				
New England	..	29%	17%	54%	2374
Mid-Atlantic	..	21	24	55	2424
South Atlantic	8%	51	41	..	1917
Midwest	29	36	35	..	1785
Pacific Northwest	38	26	36	..	1746
All Sections	11%	29%	28%	32%	1999 gal.

TABLE 19

Automatic Delivery Refinements

	On Automatic Delivery	Have Fill Signal	Companies Compute Tickets in Office
	PERCENT — OF FUELOIL USERS —		
New England	78%	94%	17%
Metro. N. Y.	93	83	12
Other Mid-Atl.	87	85	30
South Atl.	55	2	20
Midwest	53	56	18
Pacific N.W.	74	..	19
1960 All Sec.	74%	65%	19%

TABLE 17

53% of Drivers Work All Year

	Large Cities	Medium Cities	Small Cities	All Cities
New Eng.	33%	49%	80%	52%
Metro. N. Y.	49	..	..	49
Other Mid-Atl.	35	60	81	56
South Atl.	49	49	88	61
Midwest	48	43	87	58
Pacific N.W.	26	39	33	32
1960 All Sec.	40%	49%	78%	53%

TABLE 18

Driver Incentives

	Percent of Companies Using	Percent Union Drivers
New England	17%	12%
Metro. N. Y.	19	22
Other Mid-Atl.	27	20
South Atl.	59	11
Midwest	37	22
Pacific N.W.	15	77
All Sections	28%	24%

TABLE 20

Tight Fill Systems

	Percent of Companies Using	Percent of Customer Connections
NEW ENG.		
Large Cities	90%	97%
Medium Cities	57	76
Small Cities	59	24
Total	74	76
MID-ATL.		
Metro. N. Y.	63	36
Other Large	56	52
Medium Cities	71	69
Small Cities	38	36
Total	58	50
MIDWEST		
Large Cities	51	27
Medium Cities	37	21
Small Cities	15	11
Total	40	22

For some reason, we always leave until last in these summer studies, the sad job of reporting losses to other fuels. Of course, it is true as we see in TABLE 25 that we gained from other fuels more than we lost, but the trouble is that we mostly gained from coal.

The losses in the past season are not the highest we have ever had but they are higher than the two previous periods. TABLE 26, however, and the accompanying charts put a lot more emphasis on the geography of this problem.

Our big losses are in the Midwest and they are proportionately strong in the Pacific Northwest. Notice that if we combine the four units that make up the total East Coast, the losses this past season of 0.50% of all users compares very favorably with 0.59% lost the previous season. The East Coast has advantages, of course, in that natural gas came later than in the Midwest and its average cost is higher than fueloil. It is particularly important to notice that the East Coast, with 63% of the nation's oilburners, last year had 88% of the NFC cooperative advertising campaign money. The Midwest, with 28% of the oilburners in use, had only 12% of the NFC campaign funds and had a much larger geographic area to influence.

In conclusion, the several pages of this report carry a fairly optimistic and successful connotation. They show up a number of weak spots, and as an industry we are working on them. They show that fueloil still has a great deal of strength in volume and profits. There is nothing in sight particularly discouraging and we're getting estimates from major oil companies of a sustained though modest growth in fueloil demand through the decade of the sixties.

It will be harder work than it was through most of the fifties, but the industry is conditioned to that situation by now and is certainly showing more vigor as a result. This accounts for the good profit levels which will probably be maintained through another season, particularly with oil prices becoming more firm.

TABLE 21

Pumping Speeds Up

PERCENT OF DEALERS USING THESE GPM RATES

	to 35	40	45	50	60	70	80	90 and up	Avg. GPM	Gal. hour Jan.
New Eng.	15%	12%	15%	21%	24%	2%	5%	6%	53	629
Mid. Atl.	3	27	5	14	16	11	19	5	58	641
South. Atl.	23	15	..	23	31	..	8	..	51	678
Midwest	31	12	12	31	10	4	..	..	45	482
Pacific Nw.	..	34	12	33	10	..	11	..	50	590
All Sec.	14%	20%	9%	22%	16%	6%	10%	3%	52	592

TABLE 22

Monthly Budget Plans

	Percent of Customers on Budgets	Percent of Companies Offer Budget Insurance
New Eng.	25%	28%
Metro. N. Y.	36	26
Other Mid-Atl.	20	22
South. Atl.	13	15
Midwest	25	23
Pacific N.W.	19	10
All Large	25%	21%
All Medium	22	26
All Small	21	19
All Cities	23	22

TABLE 23

44% Use Bracket Pricing

PERCENT OF COMPANIES

	Large Cities	Med. Cities	Small Cities	All
New Eng.	90%	71%	60%	75%
Metro. N. Y.	55	..	..	55
Other Mid-Atl.	27	25	43	31
South. Atl.	0	7	0	2
Midwest	59	24	19	21
Pacific N.W.	98	92	97	96
All Sec.	56%	39%	41%	44%

TABLE 24

Majors' Market Influence

	Percent of Total No. 2 Fueloil Sold at Retail by Majors	Dealers Show Major Brands
New Eng.	14%	48%
Metro. N. Y.	18	68
Other Mid-Atl.	23	61
South Atl.	18	63
Midwest	36	63
Pacific N.W.	6	71
1960 All Sec.	22%	62%

TABLE 25

We gained from other Fuels 218,768
We lost to other Fuels 136,545

	LOST TO Gas	Coal	Electric	Total 1959-60 Season
New England	8,108	259	283	8,650
Mid-Atlantic	19,739	871	498	21,108
South Atlantic	2,043	54	1,223	3,320
Total East Coast	29,980	1,184	2,004	33,078
Midwest	83,259	192	2,502	85,953
Pacific Northwest	4,457	14	5,765	10,236
All Sections	117,606	1,390	10,271	129,267

Losses to all fuels

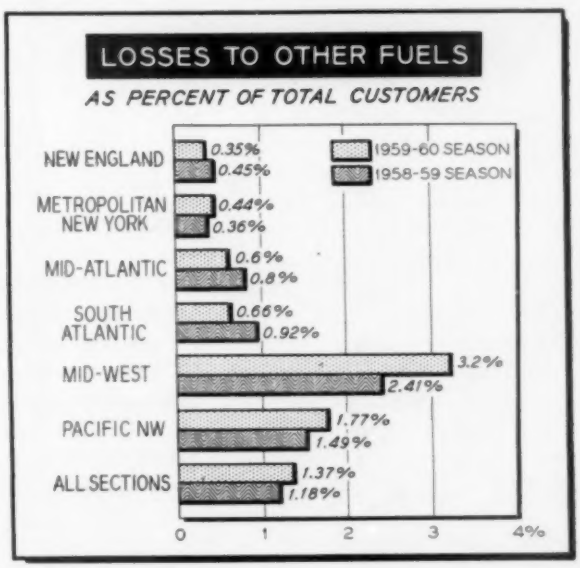
129,267 or 1.4% of total operating 1960
109,262 or 1.2 of total operating 1959
98,023 or 1.1 of total operating 1958
133,352 or 1.5 of total operating 1957
90,137 or 1.1 of total operating 1956
75,067 or 1.0 of total operating 1955
55,604 or 0.8 of total operating 1954
46,065 or 0.7 of total operating 1953
32,734 or 0.6 of total operating 1952

TABLE 26

Losses to Other Fuels

SHOWN AS PERCENT OF TOTAL OIL USERS

	Large Cities	Medium Cities	Small Cities	1960 Total	1959 Total
New Eng.	0.30%	0.63%	0.15%	0.35%	0.45%
Met. N. Y.	0.44	..	..	0.44	0.36
Other Mid-Atl.	0.74	0.53	0.50	0.60	0.80
South. Atl.	0.38	0.38	1.32	0.66	0.92
All E. Coast	0.50	0.54	0.48	0.50%	0.59%
Midwest	4.30	3.13	1.80	3.20	2.41
Pacific N.W.	1.28	1.98	2.22	1.77	1.49
All Sec.	1.64%	1.39%	1.01%	1.37%	1.18%



Getting the most from Trucks

Practical Considerations to control your Investment in rolling Stock

by Henry D. Crane

IN ITS MOST ELEMENTARY phase the fueloil business is a trucking business. Naturally, it's much more than that too, for in another sense it's a business of seeking profits out of making people feel better. But the big investment, the larger items of expense, the impression made on the community, are all very much tied to moving a liquid fuel from an inconvenient bulk plant to a very convenient small tank at the homesite.

It often has been said that the top management in a fueloil company should spend practically all of its time in popularizing oil as a fuel, in sales promotion and in seeking ways to maintain a firm and profitable market. Perhaps that's true, but if so then the second level of management . . . call it the "Operations" management . . . certainly finds its most rewarding goal in directing the big delivery units that go around the streets, with three objectives: to serve customers well; to do a good job with the smallest possible number of truck units; to get the maximum output from the minimum number of competent and highly trained men.

The first step in organizing an effective delivery system is to gain the fullest understanding of the geography of the market through the use of a well prepared map. Illustrated is an example of the type prepared by the late Harland Ragle for fueloil distributors. Through the use of radials and mileage circles the area has been divided into quarters and eighths and even smaller segments. There's no limit to the number of areas, zones or whatever you may call them, for use in making up loads of deliveries due or about to become due.

How to use the Map

The map serves first to locate the customer, next to show clearly the concentration of customers in each area and to facilitate the shortest possible mileage for dispatching any individual load.

The center or axis of the map may be the central office of a company or it may be the bulk plant . . . sometimes more than one plant in which case separate segments of maps may be mounted on the wall. It is quite common practice to assign specific colors to sections or grids of the map, either actually applying a light water color or spotting the customer locations with tacks showing the zone color. Then a small clip with the same color can be attached to the customer's control or dispatching card for quick sorting in making up loads. There are about as many systems as there are companies, but they're quite simple to work out, once you get well started with a complete zoning map.

Where a combination of colored zone symbols on the cards and color identification on the map is used, it is possible more often than not to work out a loop routing for the truck. Where the concentration of accounts is so strong that individual customer tacks are impractical, some companies use flat headed tacks with the number of accounts written on the head of the tack.

Weak Spots visible

One of the greatest values in the use of map tacks is that the distributor can quickly see where he's weakest. He has two choices: put on a concentrated sales drive to install new equipment in the area or through personal solicitation build up his oil sales; if his attempt in that direction is less than satisfactory he may drop those accounts where the mileage is too great for the returns.

Again, through the use of zone identification on the customer control cards, the dispatcher has the greatest flexibility in filling his loads. If a particular zone or grid doesn't call for a full load on a Tuesday he can either pull forward those due in the next day or two . . . or he can move across a line and catch the Tuesday deliveries of the neighboring zone.

A full application of map routing will almost totally eliminate deliveries on Saturdays or Sundays and cut overtime generally to a minimum. Not only that, but at the peak of the season any slack spot through a warm spell can be filled by pulling a lot of the "about due" deliveries ahead for a couple of days. This is, however, a rather costly expedient since it cuts

the drop size, but it's well to do it for two or three days to sort of "feel out" the weather ahead. Longer than four days is wasteful and it's better to lay off some of the drivers and drop back to actual degree-days for dispatching.

Routing and Dispatching

In the fairly thin areas of the map, not the worst, but where costs are O.K. if they are handled right, a number of companies now are using a combination of degree-day and route system. They spot one house, usually with the lowest "K" factor, and let it control the route. When that house needs oil, the driver makes a circuit of all the other accounts in that thin zone. Certainly the average drop size is reduced by this method. But when you notice that the over-all cost of operating a truck and driver is about ten cents a minute, there is a point of diminishing returns in scattered areas if only the drop size is considered.

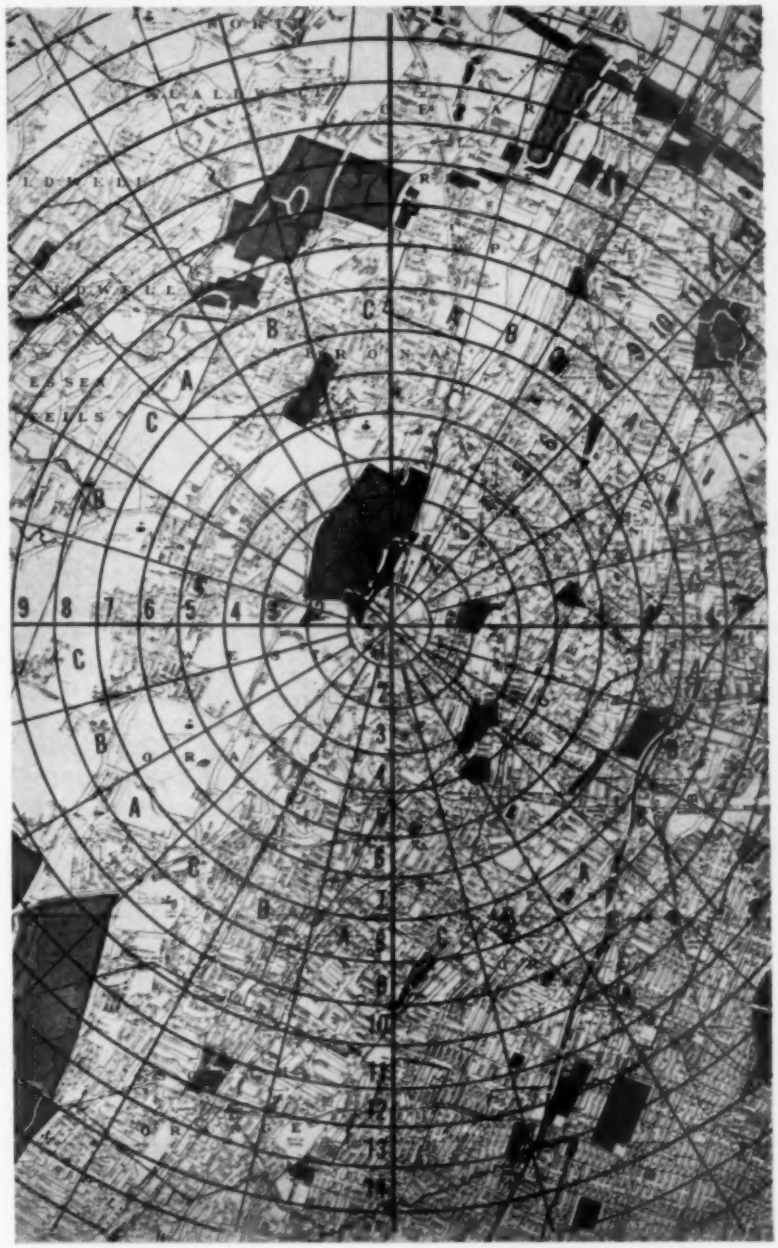
In the "routing" and "dispatching" of trucks we have some very elementary considerations but they are sometimes overlooked. The two words are used rather loosely, but combined they include determining the quickest route of travel from the loading point to the best concentrated delivery points, assuming always a full load, plus the skill of the dispatcher in getting each day's planning done enough in advance so there can be no starting delays.

Naturally, the smaller trucks with the slower speeds should be used for the shorter mileage routes with concentrated accounts. In turn, the larger the truck's capacity and the greater its speed, the better to use it on longer layouts. There's a formula on this point, often used as a rough guide:

$$\frac{\text{Gallons Capacity of Truck}}{200} = \text{maximum radius}$$

$$\frac{\text{Gallons Capacity of Truck}}{100} = \text{maximum round trip mileage}$$

This says, in effect, that a 2,000 gallon truck should not go out of a 10 mile radius from the plant, nor be used for more than a 20 mile round trip. Some large outfits with high concentration will beat those figures considerably, but they're valid for an average situation.



As far as practical, it is considered best to fully utilize your larger and faster units to the limit of their capacity, leaving the smaller ones idle in the lighter delivery seasons. Even though your big-truck costs may seem heavy because of the high depreciation figure, a close study will usually prove that their cost per gallon delivered is lower including the high depreciation . . . even when matched against the smaller, older units that have been fully depreciated on your books.

The average actual performance of any truck fleet should be continuously improving under an alert management because we must assume that some effort is constantly being made to arrive at closer custom concentration by intensive sales development.

The minimum number of trucks and drivers that may be needed from day to day should be determined in advance as far as possible, and plans made. Industry standards, assuming again a well managed company of average size, point to a full working

day of 8-10 hours accomplishing these results:

Truck Size, Gallons	*Trips per Day, Retail*	*Daily Output, Gallons*
1,000	4 to 6	4000/6000
1,500	3 to 4	4500/6000
2,000	2½ to 3	5000/6000
2,500	2½ to 3	6250/7500
3,000	2 to 2½	6000/7500

Here you have considerable flexibility, for you must take into account the weather and road conditions, the relative concentration of accounts and the degree to which delivery equipment has been modernized . . . through such facilities as fill signals, tight connections, loading and pumping speeds, ticketing practices.

Incentive systems for the drivers usually will pay their cost and keep folks pretty happy, but often there are local conditions that prevent the use of incentives. Even so, it is only elementary to set up some kind of standard of driver performance so at least the boss knows which men are the more profitable to keep in slack periods or seasons.

The top performance records of the particular trucks or individuals would obviously be the first yardstick from which to judge less productive trucks and men. The boss should never set standards for his own use or for the men's guidance that are out of range, yet they should be high enough to encourage the best results. They should also be set at a point where any extraordinary effort will pass them—for the driver's encouragement.

The dispatcher is tied to truck and driver performance nearly as closely as the men themselves. It pays to promote understanding and confidence between the two. The dispatcher is responsible for, or must at least take into account, the number of stops and their concentration, the natural geographic barriers, traffic congestion, surface transportation lines, railroads, bridges, parkways, waterways, stop lights, one way streets . . . plus street or road conditions due to weather.

As we have seen, there must always be a full load leaving the rack. If after every plan has been completed for the trip a full load is still lacking, it is often possible to add additional stops by making an updated call on automatic delivery accounts with large tanks or even with 275 gallon tanks, if they'll soon be ready. The loss in taking out a partial load is greater than the loss in making a few undersized drops.

At the end of a load as originally planned there may still be a surplus on the truck. If it's under 100 gallons, ignore it. But it may be considerably more due to refused deliveries, not-at-homes, COD problems and such. The driver should call the office by radio or phone. He will probably be told to do about the same things mentioned in the last paragraph, but the dispatcher should always be alerted to such possibilities and ready with suggestions. Remember, the truck even if idle is costing 10¢ a minute.

In that connection, some fueloil distributors get small maps printed just like the big one on the wall. These can be printed in quantity by photo-offset at small cost. Then the dispatcher, in periods when operations are unsettled, can use one of these maps daily. He marks it up to show the day's routing for the several trucks and he can better "feel" the situation if a driver calls in, can give him quicker answers. That's particularly true where there's an unexpected development, and he quickly knows which driver can best fit the need.

Some companies keep a record in the form of a "Load Factor" calculated from a formula:

$$\frac{\text{Gallons Delivered} \times 100}{\text{Number of Trips} \times \text{truck Capacity}} = \text{Load Factor}$$

Thus if 6,000 gallons were delivered in three trips with a 2,000 gallon capacity truck . . . you can figure it out . . . the factor would be 100%. This is so easy to calculate that it would be well to keep a running daily record of this factor for each truck.

An important Consideration

There's one very important consideration in getting the most out of your truck investment that we haven't touched on at all. That consideration is, strangely enough, the customer. He or she can give you a lot of trouble, can slow you down, and yet must never be offended. This is a major responsibility of management.

Naturally you want every good credit customer on automatic deliveries, but always a few don't like it, so you humor them or drop them. Changing their minds is a selling job. COD's may be broke at the moment, so no oil. That can be helped by phoning them two days ahead and announcing which day and about what time the truck will be there. If the sales department can convert COD's to budget accounts with payments starting in June, you're in great shape. Calculating the tickets in the office rather than on the truck is a fast-growing practice and a real time saver but some customers won't like it until they're "educated" to see the advantages for all concerned.

In conclusion, we can concede that this article hasn't described or explained any process or philosophy that hasn't been used for years by some of the stronger fueloil distributors over the country. Yet it may be helpful in the sense of going back to base to see if we have drifted away from some of the fundamentals.

Incentive System developed by Sinkler, Inc. gives monthly Bonuses to Drivers making efficient Use of modern delivery Equipment

How fueloil Drivers earn more

by John W. Schulz

A FUELOIL DELIVERY truck capable of highly efficient performance can be turned over to the man supposed to operate it, but he does not necessarily have to put it to work at its maximum potential.

For a fact, I know of an instance involving an electrician starting to work in a large factory employing dozens of electricians.

This man's first words to his new foreman were, "I can work fast or I can work slow. How am I supposed to work in this place?"

It's the same way with operators of modern fueloil trucks. They can work the trucks properly fast, or they can diddle and dawdle and work the trucks slow.

True, some fueloil truck drivers really enjoy being in charge of the latest, the best, in modern delivery equipment—and find personal gratification a sufficient reward for their diligence related to using the equipment strictly as it should be used.

However, gratification alone is not enough as a prize in a business world! Fueloil truck drivers who pride themselves on the efficiency with which they work, who make a high point of avoiding loitering and any outright waste of time, seem to deserve something more tangible, by way of reward, than just the gratification.

Those are the ideas, at least, of many executives in charge of the operation of fleets of fueloil delivery trucks. It's a matter of permission, not compulsion, according to some of these executives. If a man wants to work at a subnormal pace, permit him to, and pay him the normal and regular income he's supposed to get. Or permit him to work in an exceptionally efficient way, in which he can take pride and enjoy gratification . . . and if he does this, pay him more because he produces more.

That's the general idea of incentive systems, which provide greater pay or bonuses for men who produce more.

Albert Woosnam, president of Sinkler, Inc., which started in the fueloil business in 1947 with Wendel S. McMurray as secretary-treasurer. Al Woosnam developed the truck-operator incentive plan described in detail in this article. Use of the plan, together with high-speed pump loading and unloading equipment, permits six Sinkler fueloil trucks to deliver five and one-half million gallons of fueloil a year in a locality not conducive to high gallonage per year per truck.

DRIVER INFORMATION					OFFICE INFORMATION															
	1	2	3	4	1	2	3	4	5	6	7		8		9					
					HOURS CREDIT FOR															
DATE	MILES	GALLONS	NUMBER STOPS	BULK PLANT TRIPS	MILES	GALLONS	NUMBER STOPS	BULK PLANT TRIPS	MISC. TIME	LOST TIME	TOTAL HOURS WORKED		TOTAL HOURS CREDIT		DIFFERENCE PLUS OR MINUS					
1/2	68	8146	43	4	3	24	2	18	2	09	0	40	1	00			10	00	9	31	−	29
4	83	7572	44	3	4	09	2	12	2	12	0	30	1	00			10	30	10	03	−	27
5	108	8069	44	3	5	24	2	18	2	12	0	30	1	00			11	00	11	24	+	24
6	124	6005	34	2	6	12	1	42	1	42	0	20	1	00			9	30	10	56	+ 1	26
7	99	8951	39	4	4	57	2	33	1	57	0	40	1	00			10	00	11	07	+ 1	07
8	122	6518	39	3	6	06	1	51	1	57	0	30	1	00			9	30	11	24	+ 1	54
9	88	6917	42	3	4	24	1	58	2	06	0	30	1	00			9	30	9	52	+	22
11	120	7722	35	3	6	00	2	12	1	45	0	30	1	00			9	45	11	27	+ 1	42
12	80	6376	38	3	4	00	1	48	1	54	0	30	1	00			8	30	9	12	+	42
13	98	5643	34	2	4	54	1	36	1	42	0	20	1	00			9	00	9	32	+	32

This form was developed by Albert Woosnam, and is used by Sinkler, Inc. as the basis of its fueloil truck operators' incentive plan. The only information needed from the driver is the date, the number of hours he worked, and figures for the four, numbered columns under "Driver Information." Using conversion tables, office workers quickly translate the driver information of columns 1 to 4 into hours (and minutes) of credit . . . see "Office Information" columns 1 to 4.

Truck miles are divided by 20 to get hours of credit for miles travelled (or for driving time). Gallons of oil delivered are divided by 3,500 to get hours of credit for gallons (for time the pumping into truck and pumping off truck takes). Number of customer stops is multiplied by three minutes; result is converted to time in hours and minutes. Bulk plant trips is multiplied by ten minutes; result is converted to hours and minutes. Each day, one hour time is allowed for the miscellaneous activities listed in the text of the article.

Totalling columns 1 to 6 gives the number for column 8. Comparing columns 7 and 8 gives the plus or minus figures for column 8, which are totalled each month.

A few years ago, Al Woosnam, president of Sinkler, Inc., Southampton, Pa., started pondering over these problems. In every way possible, he was starting modernization of his fuel-oil handling and delivery equipment. He was spending a fortune on new equipment for fastest feasible flow of fueloil into trucks at loading racks, and fastest feasible flow of fueloil from his trucks into his customers' storage tanks.

Of the firm belief from the start that the latest, most modern in fuel-oil delivery equipment would not be used at its maximum potential unless the drivers made a high point of using it properly. Woosnam concentrated on what he could do to please his truck drivers. That is, he aimed to reward them financially for using the new fueloil delivery equipment as it should be used. That would provide an incentive for using it properly.

While being interviewed recently as data for this article were being obtained, Al Woosnam made the point that an incentive system for fueloil delivery cannot be exceedingly simple.

"If he's paid a bonus on a gallonage basis," Woosnam said, "a driver wants to make only big-drop fueloil deliveries. If he's paid a bonus on a per-stop or per-delivery basis, naturally he wants to make many, small deliveries."

Woosnam wound up with the determination to provide bonuses geared to the efforts his drivers made, whether drops of fueloil were small or large, and whether distances the trucks had to travel were small or great.

Seemingly he has achieved his objective in a highly outstanding fashion. His incentive system has been in use more than a year and a half. The success of the system, plus the switch to high-speed pumping for truck loading and unloading, now permits six delivery trucks to do the work done previously by eight trucks.

Before starting to plan his incentive system, Woosnam studied records of his fueloil truck performance for the previous five years. He spent days and days following fueloil trucks making regular deliveries, and with the cooperation of the truck operators he gained vast amounts of data and information.

Much of the material he gathered, he now emphasizes, applies strictly to his methods of operation, his locality, his type of customers, and his types of oil-handling and trucking equipment. Bear that in mind as you continue reading this article.

However, whereas the numbers that follow in this article may not be suitable for use by fueloil retailers other than Sinkler, Inc., the pattern of the incentive plan to be described is highly suitable for many oil companies.

One of the first things that Al Woosnam said is that in his company he finds no difference between 2,000-gallon and 3,000-gallon fueloil delivery trucks, in ability to do work. In a company where that's not the case, because operating conditions are different from Sinkler's, Woosnam's incentive system still can be used—using adjustment ideas to compensate for the greater or lesser effectiveness of trucks of different sizes.

In studying the actual performance of Sinkler delivery trucks as one of his preparatory steps for setting up his incentive system, Woosnam used a stop-watch.

Here's an idea of one set of studies he made using the stop-watch. As a fueloil truck arrived at a customer's house to make a delivery, he would observe its wheels closely. The very instant the wheels stopped moving, he'd snap the button of the stop-watch to start it at counting off time in seconds.

Next, the instant fueloil started flowing into the customer's tank, he

stopped the stop-watch. He made a note of the elapsed time. Next, he used the stop-watch to measure the number of seconds that went by from the time the flow of fueloil into the customer's tank stopped, and the time the wheels of the truck started as it was driven away.

Adding the two time intervals, he found out the length of time the truck was stopped at a customer's house, with time deducted for the number of seconds that oil was flowing from the truck into the customer's tank.

Total delivery Time

This works out to be the time a truck is stopped at a customer's premises—excluding the time oil is actually being delivered into the customer's tank. Many, many studies of this detail caused Woosnam to arrive at a thumb rule: Total delivery time (truck stopped at a customer's premises), excluding the time oil is flowing from the truck, amounts to 35 minutes for 11 stops.

Further simplified, this is actually used as: A truck can be expected to be at a customer's house for three minutes more than the time fueloil actually is being delivered . . . is flowing from the truck.

As for the pump-off time, that's based on the 80 gpm at which Sinkler trucks actually deliver No. 2 oil into customers' tanks. Delivering 200 gallons of oil should involve, on this basis, two and one-half minutes for actual pump-off time. Add to that the three minutes just discussed (as the time a truck may be at a house while no fueloil is flowing from it), and you expect a truck to be at a customer's premises for five and one-half minutes to deliver 200 gallons of oil.

This system takes into account time needed for loading a truck at the bulk plant. That's based on loading rate of 250 gpm (to load 2,500 gallons of oil would take ten minutes) plus ten minutes the truck is at the bulk plant while no oil is flowing into it.

Extensive on-the-road studies indicated to Al Woosnam that while one of his trucks is on the road traveling. it can be expected to go 20 miles-per-hour. That includes necessary stops in traffic, stops for red lights, backing into driveways, etc. The actual time interval starts when the wheels of the truck start moving at the bulk plant or a customer's premises, and ends when the wheels stop moving at the next customer's premises or at the bulk plant.

On this basis, a truck may travel 120 miles a day according to its odometer, for example, and the driver then is expected to have been driving the truck six hours. This seems to be a highly realistic basis for the Sinkler delivery operation.

It's expected that the truck operator will give one hour per day to miscellaneous items. These include 30 minutes per day for sorting delivery tickets, a 10-minute coffee break in the morning, and a 10-minute coffee break in the afternoon, and 10 minutes additional to round things off and make a total miscellaneous time of one hour.

A driver may do nothing during some of the time he's supposed to be working; that's called "Lost Time" in this system. If the time is lost through no fault of the driver, it's called "Justified Lost Time," and with this system the driver gets credit for having put in the time.

"Justified Lost Time" may include, for example, time spent waiting for red-tape delivery tickets to be signed at a housing project, equipment-breakdown time, time a truck is stuck in mud of temporary roads of new construction, and time to make necessary repairs or adjustments to a truck or the oil-handling equipment on it.

"Lost Time" is not justified, is not a credit to the driver, if he caused it needlessly. He does not get credit for an entire half hour or hour spent, for example, delivering oil on a COD basis.

The time taken for both loading and unloading a truck is accounted for simply, in Al Woosnam's system, by dividing the number of gallons of No. 2 oil handled by a truck during any working day by 2,500. Thus if a truck delivers 7,000 gallons of oil in one day, it's figured that two hours were given to loading the truck, and to unloading it.

Sinkler has one truck that unloads at a rate lower than 80 gpm. To compensate for this, a gallonage factor of 3,000 is used instead of the usual gallonage factor of 3,500.

The same truck sometimes delivers No. 1 oil, of which Sinkler handles an exceedingly small gallonage. This is not only pumped from the truck at a rate lower than 80 gpm, but also is loaded into the truck by a bulk-plant pump handling less than 250 gpm. To compensate for both the slow loading and the slow unloading of No. 1 oil handled by this truck, a gallonage factor of 2,200 is used (instead of 3,500).

Thus slow unloading of any particular truck is easily taken into account by using a gallonage factor lower than 3,500. Slow loading of any particular grade of oil is taken

According to this system, a working day for a truck operator could consist of the following, expected activi- into account the same way.

Headquarters of Sinkler, Inc. is in pleasant, country-like surroundings in beautiful Bucks County, Pa. Sinkler handled Atlantic fueloil from the time it entered the fueloil business in 1947, takes pride in handling an outstanding, name product. Sinkler handles a full line of oilheating and airconditioning, including Chrysler-Airtemp equipment for heating and year-round conditioning and Quiet May oil-burners. It does well in airconditioning; in October, 1959, Al Woosnam and his wife won a deluxe trip to Rome and Paris, all expenses paid, as the outstanding and most active Chrysler-Airtemp dealer in the area.

Proud of its complete facilities and well-trained personnel for installing and servicing oilheating and airconditioning, Sinkler has just started using this high-powered vacuum cleaner for boilers and furnaces, made by Delameter, Rockford, Ill. "It puts on a great show!" say these men who enthusiastically operate it. "When we start it up, the big tube acts like a constrictor snake. Kids can get scared and run, women can let out a scream, and then many people will study it in operation, and find out which fueloil company povides this ultra-modern cleaning service."

ties—and hours would be listed to credit the activities in this way:

Truck A

Activity	Hours Credit
Truck travels 60 miles	3.0
Deliver 7,000 gallons oil	2.0
40 customer stops	2.0
Six bulk-plant stops	1.0
Miscellaneous	1.0
Total Hours	9.0

Truck B

Activity	Hours Credit
Truck travels 80 miles	4.0
Deliver 5,250 gallons oil	1.5
30 customer stops	1.5
Three bulk-plant stops	.5
Miscellaneous	1.0
Justified lost time	.5
Total Hours	9.0

Truck C

Activity	Hours Credit
Truck travels 110 miles	5.5
Deliver 3,500 gallons oil	1.0
20 customer stops	1.0
Two bulk-plant stops	.3
Miscellaneous	1.0
Total Hours	8.8

As you can check in these examples, "Activity" numbers are translated easily, quickly, and simply into "Hours of Credit" numbers by these simple steps:

1. Divide miles of truck travel by 20 to obtain hours credit.

2. Divide gallons of oil delivered by 3,500 to get hours credit.

3. Multiply number of customer stops by three minutes to get credit time in minutes; then divide by 60 to get hours credit.

4. Multiply number of bulk-plant stops by ten minutes to get credit time in minutes; then divide by 60 to get hours credit.

Each day and no matter how many hours the driver actually works that day, one hour credit time is listed for miscellaneous.

Suppose the drivers of these three trucks each worked eight hours on the days for which the activities are listed above. The drivers of trucks "A" and "B" each performed activities expected to take nine hours—and each of these drivers obtained credit for nine hours of activity. On this basis, on this particular day each of these drivers would gain an extra one-hour's pay as a bonus for doing in eight hours what is considered nine hours' worth of activity.

The operator of truck "C" would obtain for this day extra pay for eight-tenths of one hour, if he did the work listed above in eight hours.

Actually, however, daily plus or minus credit differences are totalled up against each other for each month. If a driver in effect loses out by one-half hour on one day (performs 7.5 hours of work in eight hours, for example) and gains a one-half hour credit the next day (does 8.5 hours of work in 8.0 hours), then the one-half hour plus and the one-half hour minus cancel each other.

Drivers gain

Drivers have everything to gain and nothing to lose through the use of this Woosnam system . . . because if at the end of a month a driver's performance is below par for the system, he is not penalized financially. He's paid at his proper rate per-hour of actual work for the month, anyhow.

Most months, typical drivers wind up with bonuses. For the busy months of December, January, and February, bonuses have averaged $22 per month per driver.

Al Woosnam has taken definite steps to minimize driver fatigue. He finds it greatly advantageous to have only one seat in the cab of an oil truck to permit the driver to leave and enter either side of the truck easily. This saves many steps per day for the driver, and also works out to be a safety feature as it encourages leaving a cab through its curb side instead of the side on which other vehicles are passing.

Woosnam finds that locating the ticket printer in the cab is a "labor saving luxury" for the driver—and it keeps tickets clean and dry in bad weather.

He believes in double hose reels for oil trucks; a reel on each side permits delivering with equal ease from either side.

Each oil truck and service truck operated by Sinkler, Inc. is radio-equipped. The oil truck operators like radios because they save time; the result is a greater bonus for a driver. Another advantage of a radio in an oil truck, the Sinkler organization finds, lies in its taking a certain amount of responsibility from the driver. He can talk to the office regarding a problem; can ask the office to make a decision. That can be important to a driver who finds that a COD customer wants to give him a check . . . instead of cash.

The name Evangelista Torricelli gets into the Act when a Serviceman buckles down to a Study of Problems of Pumps and suction-line Vacuum

Servicemen must know about Vacuum and oil Pumps

by W. B. Adams

SERVICEMEN who do well at their everyday work of adjusting and repairing oilburners often get a bit twisted up considering and solving practical problems related to fueloil pumping, suction-line vacuums, atmospheric pressure, etc.

A reader's problem came in recently from a serviceman who wrongly believed that an oilburner pump cannot develop any vacuum in a suction line afflicted with even a teensy-weensy air leak. For details, see p. 110 of the August issue of FUELOIL & OIL HEAT. Here the serviceman was told that fortunately a pin-hole leak in the suction line of a 70 gph burner does not prevent burner operation, and that the two-stage pumps of many domestic burners and commercial burners do especially well on jobs with slight suction-line air leaks.

Also in the August issue starting on p. 36 was a short discussion of a wrong idea certain servicemen are inclined towards. They wrongly think that using a larger suction line on an outside tank job, say a ½" copper tube line instead of a ⅜" line, makes an oilburner pump work harder. They wrongly think that letting an oil pump obtain suction-line oil easily, through a larger than usual size suction line, overworks the pump and may ruin it or wear it out. As the discussion in the August issue points out, the opposite is true—you are kind to a pump when you provide it with a suction line larger than the usual size.

Show certain servicemen a drawing like accompanying Diag. 1, and ask them what's the "length of run" of the suction line . . . and they'll wrongly say it's the horizontal distance from the suction-line stub in the oil tank to the oilburner. Actually it's the number of feet of copper tubing which forms the suction line. You've got to know that fact to make proper use of tables and instructions issued by manufacturers of oilburners, pumps, and fuel units.

Next, what's the "lift" in Diag. 1? It is not the distance from the bottom of the oil tank to the highest point in the suction line, as some servicemen state in answers to examination questions. The maximum "lift" that occurs in Diag. 1 is from the bottom of the suction-line stub in the oil tank to the level of the oil pump on the burner. That's the lift the pump works against just before it runs out of oil. It's marked in Diag. 1.

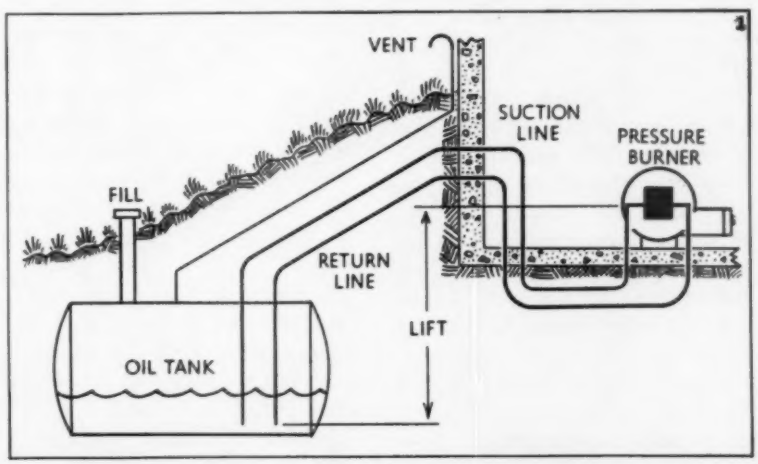
Now, here's a doozy of a question, which it's really unfair to put to even Sparky, the self-proclaimed world's best oilburner serviceman: How is it that even an excellent oil pump of a domestic burner cannot do as well at lifting fueloil when it's working at a high altitude as when it's working at sea level?

Asked that question when he last was in the New York office of FUELOIL & OIL HEAT, Sparky went into a rage and shouted, "If a darn good pump can't do as well at a high altitude as at sea level, then there's something wrong with the laws of nature, and things should be different than they are!"

He explained that he likes good oil pumps and he wants them to get the same breaks and advantages everywhere, located high up on mountains and as low down as they can be.

That puts me in mind of the difference between two men, each of whom needs a psychiatrist. One man is a psychotic, the other is a neurotic, and while they have the need for a psychiatrist in common, they are different in this way.

The psychotic says, "Two and two



"Lift" is the difference in level between the bottom of the suction-line stub in the oil tank, and the oil pump on the burner. Hills and terraces outside of homes often cause oil tanks to be considerably below burners, as is the tank in this drawing. The principle of running the return line down to the bottom of the oil tank to assist holding prime during oilburner "off" periods, shown in this drawing, was explained in detail in a feature article that starts on p. 54 of the April, 1960 issue of Fueloil & Oil Heat. For simplicity, there are no shut-off valves, filter, check-valve, etc. in the drawing . . . though an actual installation needs them.

don't total up to four."

The neurotic says, "Two and two do make four. But I can't stand it."

Another letter about suction-line vacuum appeared in the August issue of Fo&OH on p. 86. A Chicago serviceman reported pump vacuums as high as 12" and asked if these would not be lower if his boss used gate valves in suction lines instead of globe valves. He was told that the use of his idea would not drop the pump vacuums by even ½", and that today vacuums of 12" are nothing to worry about.

Here's a Solution

To handle these problems, oilburner men need a certain amount of understanding and know-how. They must be able, for example, to use the facts in accompanying TABLE I and II for solving the problems of such an outside tank installation as is shown in Diag. 1.

TABLE I gives friction loss for oil flowing through copper tubing . . . in terms of vertical static head, for oil pumps and fuel units handling No. 2 oil at pumping rates of 30 gph and 50 gph. The viscosity on which the figures are based is 50 SSU at 68°F.

TABLE II applies to fueloil at 40° API, corresponding to 0.822 specific gravity. Gravities of No. 2 oils run from about 30° to 45° API.

The facts in TABLE I and II can be used many ways. They reveal if a new installation needs a ⅜", ½", or ⅝" suction line. They can help determine if an already installed suction line is undersize, and is the cause of excessive pump vacuum with an oilburner firing normally (suction line valve open, of course). They may indicate that on a high-vacuum job the suction line is large enough, and that a kink or stoppage in the suction line may be responsible for the high vacuum.

The facts in the tables may turn out to be a warning about an oilburner being located so high above its oil tank that the pump on the burner cannot be expected to lift the oil dependably; certain installations need fuel-transfer units or pump-sets to push oil up to ceiling-mounted horizontal furnaces fired by pressure burners, for example, because oil cannot be raised great, vertical distances by suction or vacuum.

Using the Tables

Here are examples of using TABLES I and II for installations using No. 2 oil.

On a certain installation, the suction line consists of 40 ft. of ⅜" copper tubing. Pumping rate is 30 gph. The "lift" (see Diag. 1) is eight feet. How much vacuum will the pump develop with the burner running normally . . . with the oil at the lowest level in the tank that permits burner operation?

The factor of 1.9 is listed in TABLE I for 30 gph flow rate and per 10 ft. of ⅜" copper tubing. Multiply 1.9 by four because the suction line is 40 ft. long, and you obtain 7.6 ft. as the head of oil corresponding to the friction loss of the oil flowing through the ⅜" copper tubing.

Simply add that 7.6 ft. to the 8 ft. of "lift," and obtain 15.6 ft. of total, equivalent lift for this installation. Now use TABLE II to find out the required vacuum. It turns out to be more than 10" but less than 12" in this table.

Another example: What vacuum will a pump develop when the oil tank is nearly empty, but the burner is running properly, under these conditions? Suction line consists of 70 ft. of ⅜" tubing; flow rate is 30 gph; "lift" is 10 ft.

From TABLE I, you find the factor of 1.9 per 10 ft. of ⅜" tubing. Multiply this by seven because the suction line is 70 ft. long, and you get 13.3 ft. as the head of oil corresponding to the friction loss of this suction line.

Add that 13.3 ft. to the 10 ft. of "lift," and obtain 23.3 ft. as the total, equivalent lift of the job. Use TABLE II to find the inches of vacuum that jibes with 23.3 ft. head of oil. You learn that a vacuum greater than 16" must be developed. Actually about 17" must be developed, as you can figure out by interpolation.

That's excessive vacuum. You should not design for suction-line vacuum that high. Therefore switch to the idea of using a ½" suction line. From TABLE I, friction loss for the 70 ft. of ½" tubing comes out as 4.2 ft. (7 x .6—4.2). Add the 10 ft. of "lift," and you get 14.2 total, equivalent feet. Look at TABLE II, and you find that this corresponds to a design, suction-line vacuum only slightly more than 10". On a common-sense basis, that's entirely all right.

TABLE I

Size Tubing	Tubing Inside Diameter	Loss in Feet of Head per 10 ft. of tubing: Flow Rate 30 gph	Flow Rate 50 gph
⅜"	.311"	1.9	3.3
½"	.430"	.6	.9
⅝"	.555"	.3	.4

To go further in dropping the vacuum, you could plan on using a ⅝" suction line. You'd arrive at a design vacuum less than 9". Actually it's not necessary to use a ⅝" line in this instance . . . ½" is large enough.

The figures in accompanying TABLE I and II are from Bulletin FU25, issued by Webster Electric, well known for its line of "Servicesaver Fuel-Units." Bulletin FU25 contains excellent, full details on proper suction-line sizes, fuel-unit adjustments and field tests, and service instructions. Wise servicemen study and learn all the facts in it.

This sentence appears in many of the instruction sheets issued by Webster Electric:

"Suction lines should not be less than ⅜" O.D. copper tubing when tank is **above** burner, or ½" copper tubing when tank is **below** burner."

These words apply mainly to domestic installations of the kinds encountered ordinarily. Using the data in the tables, you quickly learn that extraordinary installations may need ⅝" suction lines because of uncommonly high pumping rates (perhaps the 50 gph listed in TABLE I for a high-capacity fuel unit), or uncommonly high oil lift, or suction lines unusually long (say longer than 70 ft.).

Here are a few thumb rules regarding suction-line sizes:

TABLE II
Relation between Vacuum and Vertical Lift
40° API Fueloil at 68°F.

Inches of Vacuum	2	4	6	8	10	12	14	16	18	20
Lift	2'9"	5'6"	8'3"	11'0"	13'9"	16'6"	19'3"	22'0"	24'9"	27'6"

1. Aim usually for a design vacuum (with the oil tank nearly empty) no higher than 10" . . . if you can cause the vacuum to be that low by installing a large-enough suction line. That is, if the suction-line vacuum is considerably higher than 10" only because of the small size of the suction line, then a large suction line should have been installed.

2. If high lift inevitably causes the suction-line vacuum to be higher than 10", a design vacuum up to 15" may be all right . . . particularly if the burner has a two-stage fuel unit.

Fuel-transfer Unit

3. Although certain installations run properly and dependably with suction-line vacuums up to 18", aim to avoid designing for suction-line vacuums appreciably above 15", as too often this leads to trouble. Be on guard for oil lift that's excessive on a vacuum basis. You may encounter it when planning a new installation for a super-market, garage or factory which will have pressure-burner ceiling furnaces 15 or 20 ft. above ground level, and which will have a buried oil storage tank. On such an installation, the best practice is to use a pump-set or fuel-transfer unit to send the fueloil up to the oilburners by pressure.

Obtain information on pump-sets and fuel-transfer units, made especially for such installations, from your favorite manufacturers of oilburners and fuel units.

4. Where an oil tank is below a burner and the suction line is not undersize, with the burner running normally the vacuum-gage reading will be about the same as the distance in feet which the oil pump is raising fueloil. The vacuum gage reading will include the friction loss of the suction line, which should not be excessive. On this basis, with a vacuum-gage reading of 10", for example, the oil pump is about ten feet above the level of the oil in the storage tank.

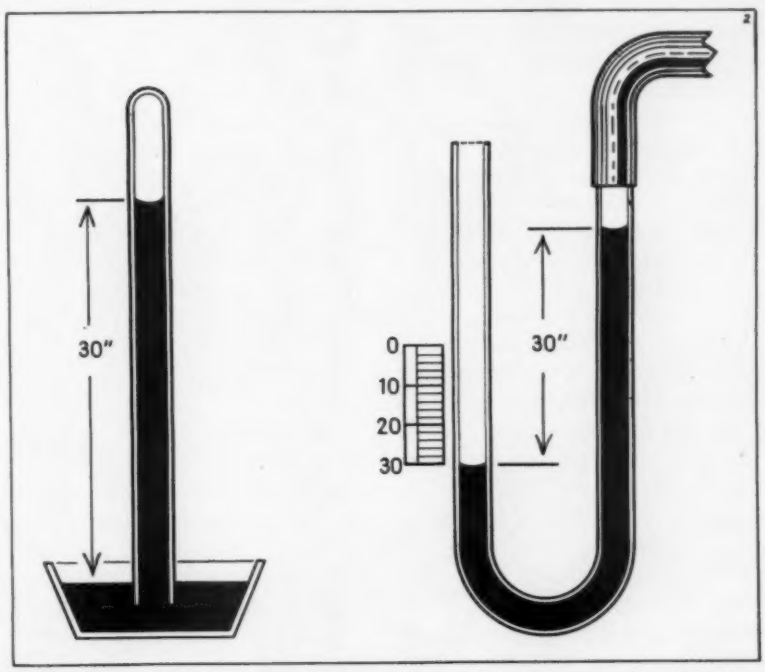
See TABLE II. Here, a 10" vacuum jibes with oil lift of 13'9". Where the 10" vacuum actually lifts oil 10 ft., the friction loss of height equals 3'9", and the suction line is not undersize.

The test for weakness or strength of a pump on a two-line installation (an installation having a return line) is to close tight a suction-line valve starting with the burner firing normally, and with the firing door or flame-observation door of the furnace or boiler kept open for safety. The pump should be handling only oil, 100% oil, no air should be passing through it. To pass this test, a good pump develops a vacuum of 25" minimum . . . reported by a vacuum gage properly installed in a fuel unit or in a pipe tee at the output side of the suction-line valve that's closed tight to make the test. A pump that develops a maximum vacuum of only 18" or 22", as examples, does not pass this test. Excellent, new pumps develop up to 27" or even 28" vacuum when tested this way.

To make this test on a one-line installation (where there's no return line), set up a fuel unit temporarily for two-line operation. Use a temporary return line that discharges into a five-gallon can or something similar.

At sea level, a reading of 30" on a vacuum gage represents a perfect vacuum, which no fueloil pump can achieve. To understand that and to understand also why high altitude impairs the oil lifting ability of an oil-burner pump, you've got to realize that living on this planet Earth gives you certain limitations. After all, the standard value for sea-level atmospheric pressure on this planet Earth is only 14.696 pounds per square inch. That's all the pressure we have at sea level to help an oil pump raise oil by suction; and it's really not much pressure. In round numbers, it's taken as 14.7 pounds per square inch.

(*Please turn to page 128*)



Torricellian vacuum, left, is described in the text of the article; in the early 1600's, it proved that atmospheric pressure at sea level is only enough to lift mercury 30". Similarly, in the U-tube manometer at the right, development of a perfect vacuum by a pump would make for a difference of only 30" in the level of the mercury in the two legs of the U-tube. The scale reading 0-10-20-30 would report on lesser vacuum the pump develops.

Here's how C. B. Stone's large volume Airconditioning fits the fueloil Business

Oil, a Springboard to Cooling

by William J. Stein

C. B. STONE, INC., Middletown, Conn., today designs and installs airconditioning systems ranging from home-cooling installations to large industrial contracts in Philadelphia and Detroit. C. B. Stone engineering, workmanship and service have won repeat business with many of the largest commercial and industrial companies in Connecticut, including scores of airconditioning systems for public utilities. A division, Stone-York Distributing Company, is the York wholesale distributor for the state of Connecticut. Another division is the wholesale distributor for Williams Oil-O-Matic and Air-O-Matic equipment in Connecticut and Western Massachusetts.

Charles B. Stone, president, is active not only in the airconditioning and refrigeration business. He is also President of the Oil Heat Institute of New England, and has been a leader in the oil heat industry since 1923, when he started in the fueloil and automatic heating business in central Connecticut. This enterprise reached a point where it became a good growing business.

In 1937, like so many others, Stone envisioned an airconditioning boom "just around the corner." Thus he started to do some small packaged commercial installations in some of the local stores, utilizing the same personnel that were employed on heating and burner service work.

The primary reason for this expansion was to provide fuller employment throughout the year for his regular personnel. Another reason was that he expected an upsurge of residential airconditioning and wanted to be prepared to meet this situation. Looking backward we now can see that, although the second reason never fully materialized, the airconditioning business ultimately developed into a successful independent contracting business.

The war, with its restrictions on materials, temporarily halted this work. After World War II two specially trained refrigeration and airconditioning service and installation men were employed to help with the cooling work that was starting to redevelop among local retail establishments. However, it was soon recognized that airconditioning involved more than merely placing a packaged unit in a restaurant or a drug store. The possibility of developing a contracting business in comfort cooling, refrigeration and industrial processing was explored.

In 1953 Charles B. Stone, Jr. came into the firm to develop all the facets of an airconditioning business. Prior to this he had spent a number of years with General Electric as a sales and application engineer in airconditioning. His responsibilities included designing systems and assisting builders and distributors with airconditioning problems. He also helped with organization and training programs, such as schools in technical, management and sales problems. With this background as a foundation, he helped organize an airconditioning business as a division of C. B. Stone, Inc.

Simultaneously a number of events started to happen. The firm, at this point, started to go after the industrial market. This involved retaining high calibre personnel who could properly evaluate the cooling needs of individual and different conditions and design systems that would operate efficiently at the lowest cost to the customer. Personnel for the operations section was similarly recruited. A staff of refrigeration and airconditioning installation and servicemen was employed in addition to members of the regular heating and burner service departments.

The opportunities for individual

A successful fueloil-oilheating business led C. B. Stone, Middletown, Conn., to go into airconditioning in 1937. The expected boom did not materialize in residential work but the firm eventually developed a substantial independent contracting business specializing in large volume airconditioning in commercial and industrial applications. For the past seven years C. B. Stone, Jr., has worked to build up the airconditioning side of the business. The company now typically will have 40 jobs in process continuously throughout the year.

growth and for utilizing one's personal creative talents, together with financial rewards commensurate with one's contributions, proved a sufficiently attractive incentive to gather a well integrated staff which now operates as a team.

The airconditioning contracting business is a division of C. B. Stone, Inc. Charles B. Stone, Jr., a vice-president, is in charge of sales. He is assisted by S. E. Gifford, chief engineer, and five sales engineers. Operation of the company is headed by C. R. Conrad, a vice-president. Under his direction the crews of refrigeration and airconditioning installation and service personnel work.

With its present staff the firm has tackled all types of comfort airconditioning in residential, commercial and industrial places. It also has engaged in various industrial process conditioning.

For example, equipment has been installed in a commercial firm manufacturing film. The purpose of this installation is to control the humidity and maintain a constant moisture level in order to process the film properly. The problem of dust removal in certain mills has been solved by filtering systems installed by C. B. Stone, Inc. In a number of instances refrigeration systems have been installed in plants to provide a means of quickly cooling a product that is being manufactured. Airconditioning has even been installed in biological laboratories for the purpose of removing foul odors.

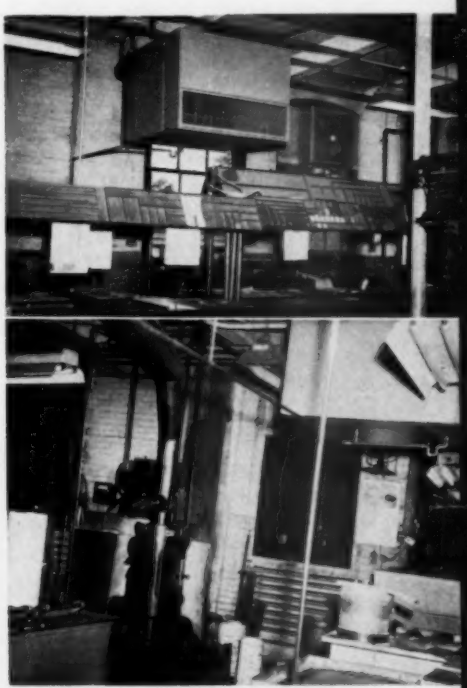
Jobs posing special challenges have become a specialty with this organization. In 1958 the ingenuity of the staff was called upon to design an airconditioning system for the operating rooms of the Middlesex Memorial Hospital in Middletown. Several hurdles were placed in the path of the job. First, all possible sources of sparks within the equipment had to be removed. The equipment had to be relatively portable, because some changes were expected to be made in the building in the near future. Of course, as with most hospitals, this work had to be done within a very limited budget.

The engineering staff did some practical research on adapting standard equipment to the needs of this hospital. Visits were made to New York hospitals to study the requirements of similar installations. Additional research was done with suppliers of explosion proof components in order to adapt their products.

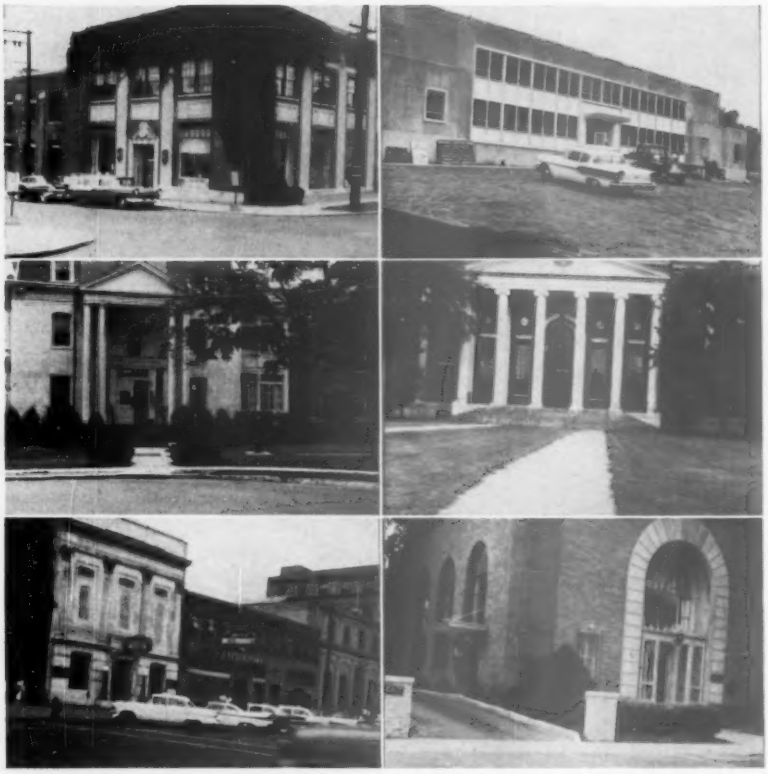
Gathering this information together, the staff redesigned and rebuilt the equipment to higher standards of safety than were set by the specifications for electrical equipment going into the surgical department of a hospital. Prior to installation, weeks were spent testing the equipment to assure a substantial margin of safety.

The job was completed with seven standard York commercial units as the basic equipment. Two 2-ton units were placed in each of three large operating rooms. One 3-ton unit was placed in a smaller operating room. Beyond the safety element, the demands for ventilation, cooling, filtra-

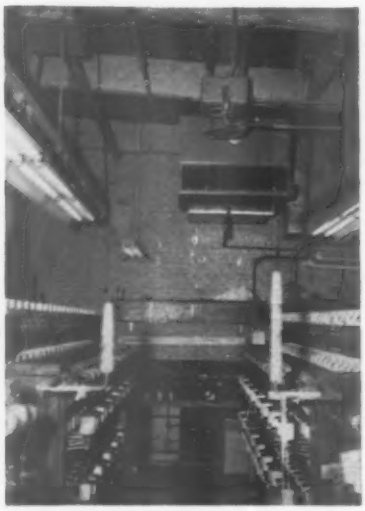
C. B. Stone, Jr. and Sr. (left to right), stand in front of one of the firm's fueloil trucks. C. B. Stone, Jr., has been supervising the airconditioning side of the business for the last seven years. The company has developed a sizable independent contracting business specializing in large airconditioning jobs.



Middletown Press Building installation, showing (top) ceiling-suspended units in the newspaper's composing room and (bottom) airconditioning installed to cool the type-making room. Type melting furnace operates at a temperature of 600°. Even under these conditions the airconditioning unit keeps things cool.



Some typical installations of large volume airconditioning completed by C. B. Stone, Inc. Top row: Hartford Electric Light Co., Middletown, Conn. (left); new Middlesex County Building (right). Second row: Middlesex Memorial Hospital (left); Library, as well as a number of other buildings, at Wesleyan University, Middletown (right). Bottom row: United Restaurant, an early airconditioning job by Stone in Middletown, as well as the bank building next to it and others here on Main st. (left); Riverside Bank & Trust Co., Portland, Conn. (right).



An example of special application airconditioning installed by Stone in the Vamos textile mills in Middletown. The main purpose of the equipment here is to filter out and control fine dust cast off by hundreds of rotating thread spindles.

tion, and humidification are most exacting under the conditions of serious concentration as is usual during surgery.

For two years now the administration as well as the professional staff at the hospital have testified to the effectiveness of this system. Most important, C. B. Stone, Inc. has pioneered in bringing the cost of this airconditioning down to one-half the cost of previous average installations. The contribution allows the advantages of airconditioning to be made available to small and medium-sized hospitals that previously could not afford this work. Hospital administration journals have studied the job and through their editorials have called it to the attention of all hospital administrators in this country. C. B. Stone operating room airconditioning installations subsequently have been made elsewhere in Connecticut.

Although research costs cannot be absorbed completely by an initial job such as this hospital job, the compensation comes in terms of additional work that this venture produced. Recognition as an expert is rewarded by the confidence that all customers express in terms of a desire to deal with a firm like C. B. Stone, Inc.

Another interesting job was that completed for the *Middletown Press* building. Here not only the offices were airconditioned, but also the composing, typesetting, and printing floors. It takes a brave man to step into rooms with lead melting ovens operating at over 600 degrees and attempt to bring the temperature down to a comfortable level. On the drawing boards, at C. B. Stone, Inc., the engineering staff designed a system specifically to cope with the air-handling problems involved in each section of this building. Now, after the job had been completed, as one walks through the working area near these ovens, even on the hottest day, the relative comfort can be felt.

On this particular job 63 tons of York packaged airconditioners were used to provide complete zoning, greater flexibility of temperature control and lower operating cost. This system is so designed that parts of it may operate throughout the winter to maintain a comfortable temperature in those rooms where the machinery itself generates excessive heat.

The greatest pride at C. B. Stone, Inc., and probably the reason for its success, lies in the volume of repeat business that this company now enjoys from customers with multiple office and plant facilities.

For example, the public utilities, throughout the State of Connecticut, have been calling on C. B. Stone, Inc. for airconditiong work. The company has installed about 70 systems in various utilities offices throughout the State. Similarly, industrial plants with problems in process airconditioning and refrigeration, as well as comfort cooling, repeatedly have called upon C. B. Stone, Inc. for its new work.

To maintain this position Charles B. Stone, Jr. implied that it is the basic policy of the firm to render a brand of engineering workmanship and service that will get a second job.

The firm wants its customer's business and will do everything reasonably possible to design the most efficient job for the purpose and then provide the necessary service to keep that customer happy. The element of cost is always a consideration. The engineering staff has been able to simplify installations designed with standardized equipment to substantially reduce costs to customers.

This creative approach to airconditioning by a firm that was basically in fueloil distribution has yielded a substantial volume of work. Presently, an average of 40 installations are in process continuously throughout the year.

The ultimate question is whether or not this is a profitable business. The answer is in the affirmative. However, Charles B. Stone, Jr. noted that the "break-even point" is quite high. In other words, getting into process refrigeration and large industrial cooling work requires designing and installing operations that are costly. However, when the volume is balanced with the staff, business becomes profitable.

Although C. B. Stone, Inc. can point to jobs throughout the State of Connecticut, and can go out as far as Detroit and Philadelphia, a tour of Middletown will attest to the growth of this business. Drive down the main street and you will see almost every type of commercial store with an airconditioning installation by C. B. Stone, Inc. This will include establishments from the smallest retail store to the larger department stores in town. Banks, utilities, private and public office buildings are included. Go out into the surrounding area and the scope of installations broadens from small factories to large industrial plants. It is interesting to note the feeling of the members of the firm, after spending an afternoon viewing many of the varied installations that have been made in the last few years. It is like taking inventory of a job well done.

A division of C. B. Stone, Inc., known as the Stone-York Distributing Co., is the exclusive wholesale distributor of York refirgeration, airconditioning and heating equipment for the State of Connecticut. This company has a substantial stock of packaged equipment in its warehouse located in the center of the state. It is the function of this firm to develop other York dealers throughout this territory.

In connection with this Charles B. Stone, Jr. pointed with pride at the dealer assistance program this firm has been offering. First, it provides a source for immediate delivery of airconditioning equipment from a centrally located point. Second, it engages in an active dealer assistance program. Periodically it conducts schools in its own building for all its dealers. These schools cover such topics as:

1. Fundamentals of airconditioning;
2. Load calculation and unit selection;
3. Air distribution, layout and design;
4. Controls, piping and accessories;
5. Surveying and price estimating;
6. Selling.

The staff of instructors comes from the engineering and operations sections of C. B. Stone, Inc. The good work these men have been doing is attested to by the many compliments received from the participants.

An individual assistance program is made available also to the dealers. This program is almost a necessity when a dealer first starts. Specific jobs are reviewed with the dealer and assistance is offered with the various phases of engineering and installation.

Charles B. Stone, Jr. commented on how relatively easy it is for a fueloil dealer who has competent service and equipment men to become a factor in airconditioning work in his community if he considers this work seriously and if he will ally himself with a wholesaler who has a strong "help-sell" dealer assistance program.

C. B. Stone airconditioned the factory and offices of the Associated Spring Corp., Bristol, Conn. Shown at the left is the equipment installed to control temperature and humidity in the precision spring development laboratory. On the same job Stone installed these fan-coil units (right) with water chiller to aircondition the executive offices.

Case History tells how Broomall, Pa., fueloil Dealer streamlined his Accounting

Delivery and office Procedures

Robert B. McLaren (left) talks to driver Ralph W. Taylor—modern data processing boosts operating efficiency.

WOULD YOU LIKE to handle customer accounting records rapidly, easily, accurately? Do you want to eliminate work loads and overtime in the office? Do you want your business to expand without increasing office costs? Do you want to help your drivers make more deliveries without working longer hours?

Then follow the example set by William and Robert MacLaren, fueloil dealers in Broomall, Pa. They installed a Burroughs F 2000 Business Computer, designed especially for fueloil dealer accounting and delivery scheduling.

Drivers no longer waste valuable time figuring and writing up customers' bills. Billing is done in the office, —where it belongs—with the computer updating a customer's bill, statement, ledger, degree-day ledger and an accounts receivable journal in one, rapid operation.

Price per gallon for each grade of oil, the sales tax percentage figure and the present degree day are stored in the memory unit of the computer. This means that to update all of a customer's records only the following information is introduced into the computer: The number of gallons delivered, the grade of oil, the K factor, and whether the customer's account is up-to-date or has an outstanding balance.

The MacLaren brothers founded their company in 1946. Keeping pace with the growth of Broomall and the surrounding community, their list of customers has grown to over 2,000 accounts.

As the company expanded, the MacLaren brothers foresaw the work loads and confusion that could result from a rapid flow of paper work. They didn't want to become involved in bookkeeping chores. They wanted to continue to promote their business.

Several years ago they purchased an accounting machine to handle accounts receivable. Although the machine

Work arrangement at MacLaren's has Dorothy E. Fitzgerald at the computer, degree-day ledgers and meter tickets at left, customers' statements and ledgers at the right. To pull, update and return customers' records to file requires 40 seconds.

worked satisfactorily, they felt the work should be further automated, that it should produce up-to-date figure-facts on current business activity.

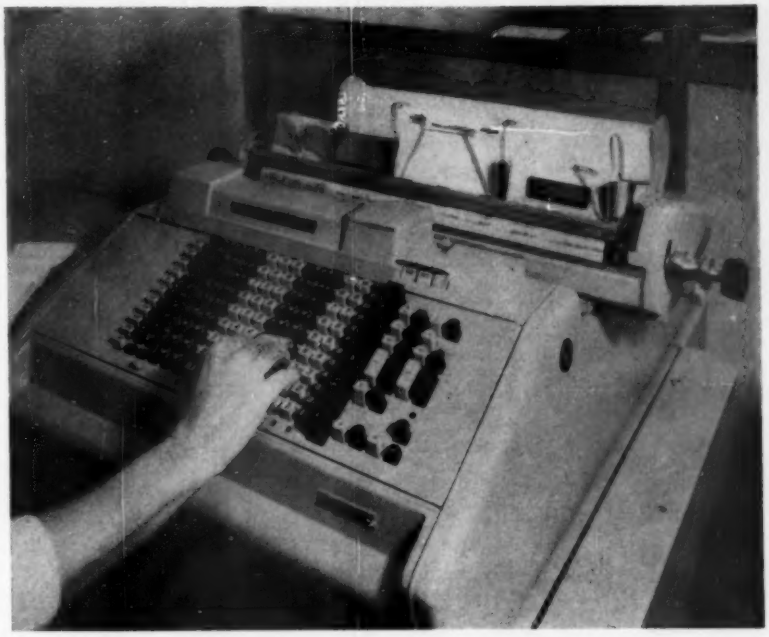
They selected a Burroughs F 2000 Business Computer.

Delivery tickets are pre-addressed and at the time of delivery are stamped by truck meters. Immediately after metering the ticket, the driver proceeds to his next delivery. At the end of the day he turns in his tickets for processing in the office.

To write the bill, the computer automatically provides the net amount, tax and total bill, at the same time the statement, ledger and degree-day card are updated, with the latter showing the degree-day of next delivery.

In way of speed, the MacLaren brothers report that their computer operator completes a transaction in 40 seconds. This includes removing forms from the file tray, updating them and re-filing them. The computer functions as rapidly as data is introduced into the keyboard.

One additional feature is the automatic storage of selected information. At MacLaren this feature furnishes the following facts for management: The grand total of gallons delivered for the day, net dollar sales, tax amounts and gross dollar sales.



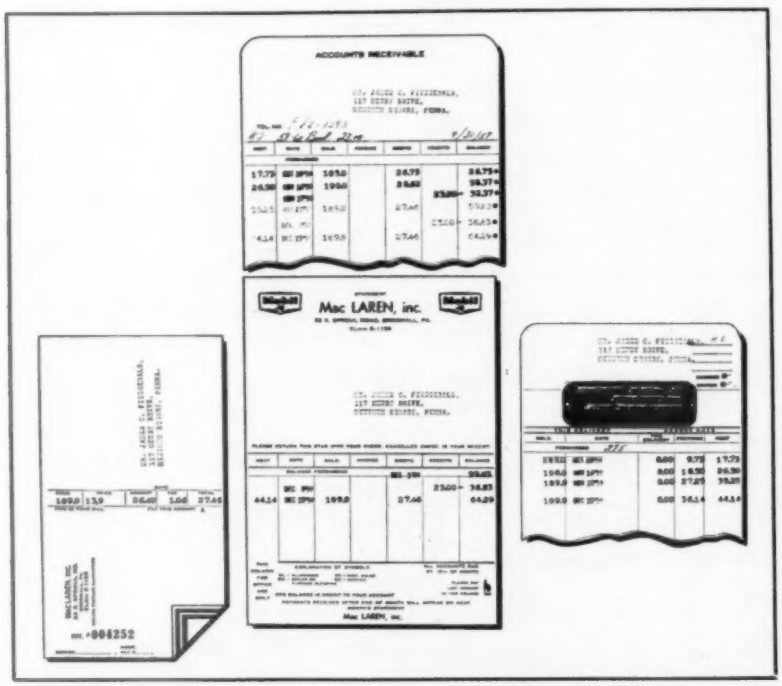
Easy to understand keyboard controls input of data. Forms in computer (left to right) are postcard bill, statement, ledger, degree-day ledger. Journal is behind forms. Data is fed into computer only once, even though it prints on several forms.

As payments are received, they are listed in a cash receipts journal and bank deposited. Using the statement stubs which accompany payments, the computer operator credits customers' accounts. Statements and ledgers are completed as rapidly as data is introduced into the keyboard. Totals of payments store in the computer, print on a journal and must balance with the bank deposit.

Handling special transactions, such as deliveries to tax exempt institutions and to customers having special rates, also has become highly automated. The computer operator merely follows the routine steps but skips tax computation or lists variances on the computer keyboard.

The MacLaren brothers report that without their new techniques they would have had to enlarge their office staff. Each driver also would have spent additional time each day writing up bills. Most important, work is now processed more rapidly, with complete accuracy and less effort.

William and Robert MacLaren estimate that their Computer will pay for itself in less than two heating seaons—all of which proves that automation is a wise investment.



Updated records: Postcard bill at left is mailed to customer; ledger card (top) shows every transaction; statement (center) is mailed; degree-day ledger (right) schedules next delivery. Journal (not shown) lists all customers' transactions.

Range Oil Sales by Grades and States

(Thousands of 42-gallon Barrels)

	Kerosene	No. 1 Fuel	Total 1959	Total 1958
NEW ENGLAND STATES				
Mass.	5,486	1,045	6,531	9,149
Conn.	2,371	121	2,492	3,759
R. I.	1,106	227	1,333	2,311
Maine	2,634	460	3,094	3,464
N. H.	939	237	1,176	1,698
Vt.	916	41	957	1,114
	13,452	2,131	15,583	21,495
MID-ATLANTIC STATES				
N. Y.	5,555	336	5,891	6,349
N. J.	2,730	100	2,830	3,764
Pa.	3,250	71	3,321	3,747
Md.	2,556	31	2,587	3,292
Del.	905	1	906	957
D. C.	123	9	132	226
	15,119	548	15,667	18,335
MIDWESTERN STATES				
Illinois	3,234	1,716	4,950	6,849
Mich.	6,596	2,207	8,803	6,027
Wisc.	2,623	1,247	3,870	3,480
Ind.	3,872	1,016	4,888	3,937
Minn.	2,204	1,334	3,538	2,754
Mo.	2,261	526	2,787	1,576
Iowa	2,552	840	3,392	2,185
Ohio	2,181	292	2,473	1,395
Nebr.	563	81	644	497
S. D.	939	438	1,377	729
Kan.	485	17	502	901
N. D.	921	405	1,326	663
	28,431	10,119	38,550	30,993
WESTERN STATES				
Alaska	3	*	3	*
Colo.	280	40	320	235
Mont.	505	220	725	146
N. M.	48	6	54	168
Calif.	81	..	81	128
Idaho	97	101	198	109
Wyo.	92	7	99	40
Utah	16	10	26	23
Ore.	1	..	1	2
Wash.	..	..	..	5
Ariz.	..	..	..	1
Nev.	..	..	..	..
	1,123	384	1,507	857
SOUTHERN STATES				
N. C.	10,888	378	11,266	12,560
Tex.	302	8	310	676
S. C.	3,815	196	4,011	4,169
Ga.	1,104	17	1,121	2,257
Va.	5,196	123	5,319	4,506
Fla.	3,798	123	3,921	3,719
Tenn.	1,307	15	1,322	920
Ark.	70	6	76	130
Okla.	150	24	174	165
La.	47	3	50	85
Ala.	263	2	265	596
Ky.	1,208	74	1,282	939
Miss.	21	2	23	219
W. Va.	197	..	197	188
	28,366	971	29,337	31,129
TOTAL UNITED STATES				
Total	86,491	14,153	100,644	102,809

* Not included in U. S. totals before 1959.

Heating Oils showed Gain in 1959 in Spite of the warmer Weather

HEATING OIL SALES reported in Mineral Market Report, No. MMS 3109, prepared by the Bureau of Mines, United States Department of the Interior, indicate a slight gain for distillate fueloils in 1959.

Distillate Fueloil

Total domestic sales of distillate fueloils increased 1%, kerosene sales remained unchanged and residual fueloil sales increased 4% in 1959. Alaska was included in the 1959 survey for the first time. Industrial activity as measured by the Federal Reserve Board Index was 8% higher than 1958 despite the 1959 steel strike.

Sales of distillate fueloil in 1959 totalled 658,992 thousand barrels (42 gals. each). Heating oil sales showed a small gain despite warmer weather. The over-all weather in 1959 was about 5% warmer than normal; 1958 was 2% colder than normal.

Declines reported in sales to industrial consumers, gas and electric utility power plants and the military were just about offset by increased sales to oil companies for fuel, to railroads, for bunkering vessels and for on and off highway diesel-powered vehicles.

Sales of jet fuel for military use decreased 2% in 1959 to 94,269 thousand barrels; commercial jet fuel sales in 1959 amounted to 14,432 thousand barrels compared with 6,063 thousand barrels in 1958.

Residual Fueloil

Sales of residual fueloil totalled 554,352 thousand barrels in 1959. Heating oils, industrial use and gas and electric utility power plant use showed substantial gains.

Domestic demand for residual fueloil in PAD District 1 and U. S. total for 1959, as reported in the Monthly Petroleum Statement, was overstated by approximately 4,300,000 barrels due to misreporting to the Bureau of Census of withdrawals from bonded storage. Residual fueloil sales reported here reflect this correction.

Kerosene

Kerosene sales totalled 108,494 thousand barrels, about the same as in 1958. Some commercial jet fuel has been reported as kerosene in the monthly production and demand figures of the Bureau of Mines. In the tabulations here kerosene used as commercial jet fuel is excluded from the kerosene statistics.

Revisions

Residual fueloil and kerosene data for 1958 have been revised using PAD district demand data rather than U. S. total domestic demand as the basis for expanding the reporting sample. Revised 1958 data are comparable with 1959 data.

The report, "Sales of Fueloil and Kerosene in 1959," was prepared by Walter G. Messner, Branch of Petroleum Economics, Division of Petroleum, Bureau of Mines, Washington, D. C. Statistics for District 5—Arizona, California, Nevada, Oregon and Washington—were compiled by Frank A. Moore, Division of Mineral Resources, San Francisco, Calif.

Fueloil Sales 1955-1959 by Uses

(In millions of 42-gallon barrels)

DISTILLATE 1955	1956	1957	1958	1959†		RESIDUAL 1955	1956	1957	1958	1959†
339	360	360	399	403	Heating	86	88	81	106*	112
17	17	17	14	14	No. 1 sold as range	..	..	..	..	..
85	90	88	84	33	Railroads	15	11	7	143*	168
17	19	20	19	9	Vessels	115	117	124	46	46
6	5	5	5	5	Utilities	76	74	77	77*	82
44	45	44	38	88	Industrial	173	178	167	6	6
8	10	10	8	19	Oil Company Fuel	53	53	50	106	102
11	11	13	13	11	Armed Forces	28	31	29	37	31
54	59	60	74	77	All other uses	10	10	10	10	7
581	616	617	654	659	Total United States	556	562	545	531	554
25	34	48	19	13	Exports	34	28	39	26	26
606	650	665	673	672	Grand Total	590	590	584	557	580

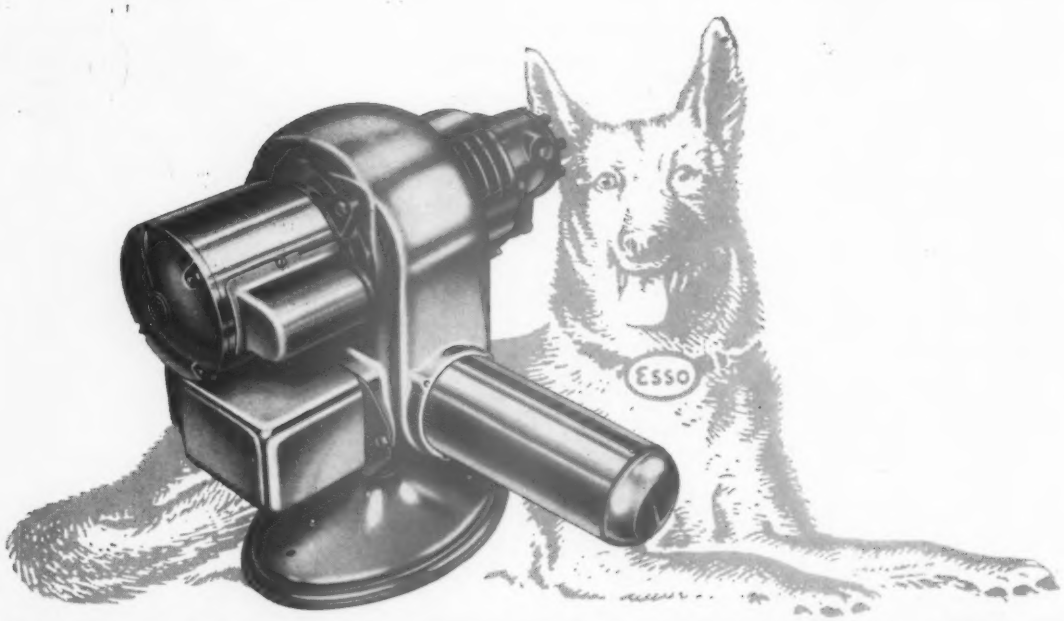
*Revised. †Includes Alaska.

Heating Oil Sales
by Grades and States
U. S. Bureau of Mines

(Thousands of 42-gallon Barrels)

Total Distillate							Total Residual				Grand Total	
No. 1	No. 2	No. 3	No. 4	1959	1958	Districts	No. 5	No. 6	1959	1958*	1959	1958*
480	4,947	..	20	5,447	4,642	1	414	689	1,103	1,003	6,550	5,645
158	3,451	..	..	3,609	3,533	NEW ENGLAND	120	158	278	266	3,887	3,799
108	1,948	..	29	2,085	2,407	Maine	12	66	78	150	2,163	2,557
1,073	36,864	55	529	38,521	43,229	New Hampshire	4,565	8,866	13,431	10,132	51,952	53,361
213	6,231	..	3	6,447	6,505	Vermont	484	1,006	1,490	1,801	7,937	8,306
98	19,033	13	1,471	20,615	21,632	Massachusetts	255	3,446	3,701	4,361	24,316	25,993
						Rhode Island						
2,130	72,474	68	2,052	76,724	81,948	Connecticut	5,850	14,231	20,081	17,713	96,805	99,661
						2						
No. 1	No. 2	No. 3	No. 4	1959	1958	MID-ATLANTIC	No. 5	No. 6	1959	1958*	1959	1958*
803	58,845	20	5,330	64,998	68,734	New York	1,234	36,370	37,604	32,317	102,602	101,051
378	44,741	10	3,061	48,190	33,630	New Jersey	395	2,636	3,031	4,461	51,221	38,091
608	30,514	50	342	31,514	31,331	Pennsylvania	3,811	4,213	8,024	7,131	39,538	38,462
137	2,026	..	5	2,168	2,006	Delaware	415	771	1,186	2,210	3,354	4,216
98	8,810	1	121	9,030	12,191	Maryland	1,063	2,820	3,883	3,690	12,913	15,881
36	2,010	75	275	2,396	2,941	Dist. of Columbia	555	1,699	2,254	2,070	4,650	5,011
2,060	146,946	156	9,134	158,296	150,833		7,473	48,509	55,982	51,879	214,278	202,712
						3						
No. 1	No. 2	No. 3	No. 4	1959	1958	MIDWEST	No. 5	No. 6	1959	1958*	1959	1958*
3,826	15,072	537	116	19,551	20,713	Michigan	833	1,750	2,583	2,391	22,134	23,104
3,233	7,669	218	370	11,490	11,544	Ohio	219	274	493	508	11,983	12,052
2,939	9,687	1,080	290	13,996	14,138	Indiana	645	737	1,382	769	15,378	14,907
3,606	21,945	1,981	371	27,903	28,216	Illinois	4,174	5,328	9,502	11,196	37,405	39,412
2,096	11,124	670	106	13,996	13,463	Wisconsin	1,324	718	2,042	1,812	16,038	15,275
1,885	6,211	17	20	8,133	9,815	Minnesota	532	590	1,122	1,132	9,255	10,947
2,089	5,066	52	2	7,209	6,331	Iowa	225	245	470	588	7,679	6,919
1,397	3,349	329	15	5,090	8,101	Missouri	1,277	219	1,496	1,311	6,586	9,412
458	393	7	3	861	679	Kansas	68	69	137	113	998	792
647	964	72	4	1,687	2,176	Nebraska	14	53	67	59	1,754	2,235
279	965	..	..	1,244	1,485	South Dakota	30	8	38	91	1,282	1,576
223	1,527	8	..	1,758	1,422	North Dakota	38	62	100	124	1,858	1,546
22,678	83,972	4,971	1,297	112,918	118,083		9,379	10,053	19,432	20,094	132,350	138,177
						4						
No. 1	No. 2	No. 3	No. 4	1959	1958	WESTERN	No. 5	No. 6	1959	1958*	1959	1958*
3,569	..	8,420	..	11,989	10,713	Washington	2,049	1,582	3,631	3,496	15,620	14,209
1,653	..	3,995	..	5,648	5,037	Oregon	1,141	718	1,859	1,676	7,507	6,713
814	..	2,626	..	3,440	3,108	California	878	1,658	2,536	3,404	5,976	6,512
524	60	120	35	739	577	Montana	131	40	171	219	910	796
830	643	560	7	2,040	2,062	Idaho	17	9	26	21	2,066	2,083
97	115	..	7	219	288	Wyoming	67	183	250	120	469	408
308	258	9	..	575	626	Colorado	19	548	567	255	1,142	881
217	251	124	27	619	878	Utah	160	62	222	33	841	911
164	..	298	..	462	455	Nevada	58	56	114	85	576	540
44	63	2	..	109	90	New Mexico	..	44	44	27	153	117
104	..	257	..	361	289	Arizona	8	3	11	8	372	297
746	..	852	..	1,598	**	Alaska	224	27	251	**	1,849	**
9,070	1,390	17,263	76	27,799	24,123		4,752	4,930	9,682	9,344	37,481	33,467
						5						
No. 1	No. 2	No. 3	No. 4	1959	1958	SOUTHERN	No. 5	No. 6	1959	1958*	1959	1958*
425	6,366	..	99	6,890	6,489	Virginia	508	3,666	4,174	3,480	11,064	9,969
5	269	..	6	280	226	West Virginia	30	57	87	35	367	261
786	5,794	3	..	6,583	5,988	North Carolina	297	405	702	210	7,285	6,198
500	2,283	..	..	2,783	2,429	South Carolina	184	177	361	796	3,144	3,225
167	829	..	1	997	758	Georgia	106	21	127	116	1,124	874
260	1,911	..	3	2,174	1,688	Florida	132	736	868	1,000	3,042	2,688
448	1,381	..	15	1,844	1,229	Kentucky	33	41	74	39	1,918	1,268
98	666	..	..	764	704	Tennessee	17	8	25	..	789	704
83	364	..	..	447	349	Alabama	85	43	128	254	575	603
3	29	..	..	32	114	Mississippi	4	..	4	3	36	117
9	21	..	..	30	118	Arkansas	..	..	..	93	30	211
3	817	167	24	1,011	799	Louisiana	3	4	7	49	1,018	848
131	43	..	..	174	258	Oklahoma	13	8	21	22	195	280
852	2,004	..	8	2,864	3,017	Texas	65	30	95	512	2,959	3,529
3,770	22,777	170	156	26,873	24,166		1,477	5,196	6,673	6,609	33,546	30,775
No. 1	No. 2	No. 3	No. 4	1959	1958	TOTAL UNITED STATES	No. 5	No. 6	1959	1958*	1959	1958*
39,708	327,559	22,628	12,715	402,610		Total U. S. 1959	28,931	82,919	111,850		514,460	
42,617	324,957	18,743	12,836		399,153	Total U. S. 1958	30,443	75,196		105,639		504,792

*—Revised.
**—Not included in U. S. totals before 1959.



NEW HIGH EFFICIENCY ESSO "WATCHDOG" OIL BURNER

For Long Years of Clean, Quiet, Trouble-Free Operation

The great new Esso "Watchdog" Oil Burner actually creates more time for you to spend more profitably — developing more prospects, getting new customers, and *selling more burners!*

CLEAN IT ONLY ONCE IN THREE YEARS!

Now you can reduce service calls for boiler and furnace cleaning because the Esso "Watchdog" Oil Burner operates so cleanly that, in most installations, the heating unit requires cleaning only once in three years. This lets you spend more of your time at greater profit-making calls.

DOUBLE "ECONOMY CLUTCH" ASSURES CLEAN COMBUSTION

An exclusive feature of the "Watchdog" Oil Burner is the new Double "Economy Clutch" which starts a flow of air before the flame is ignited and permits air flow to continue after the flame has ceased. The Double "Economy Clutch" brings new high standards of efficiency and low fuel consumption.

FORGET ABOUT STARTING SWITCH TROUBLE!

Many service calls previously have been caused by failure of the starting switch for oil burner motors. Now the new Esso "Watchdog" Oil Burner eliminates starting switch failure! How? Famed Esso research found a way to link a capacitor motor, fan and oil pump, and eliminated the troublesome starting switch entirely! Current alone starts the rotor operation . . . no starting switch, no commutator!

ADJUST AIR FLOW ONE TIME AND THAT'S IT!

A new screw-ratchet air control locks itself permanently after the initial adjustment. Meters the air supply with micrometer accuracy. Also, the new deep-finned head design increases cleanliness and running efficiency.

Made of rugged cast iron, the new Esso "Watchdog" Oil Burner promises smooth, virtually noiseless operation and burner starts of unmatched cleanliness. Remember, if you want to sell the hottest heating unit on the market, and not be run ragged by unprofitable service calls, contact your Esso Representative today!

ESSO "WATCHDOG" OIL BURNERS FOR 1960 OFFER THESE IMPORTANT ADVANTAGES!

- Exclusive new Double "Economy Clutch", for cleaner burning from start to finish. Cuts heating costs as much as 24%.
- Self-locking screw-ratchet air control which eliminates manual adjustment of air shutter.
- New deep-finned head design, for cleaner, more economical heating.
- Starts on current alone. No delicate starting mechanisms.
- Compact new design, of rugged cast iron.

Esso®

ESSO STANDARD

DIVISION OF HUMBLE OIL & REFINING COMPANY

Teaching Janitors Facts about big Oilburners

Educating Janitors of large Buildings is a big Problem; economical and dependable oil Heat depends on it

by Jean L. Dupuis

EDUCATION is the great world-wide problem, everyone agrees; with much more education, the world's masses would enjoy greater health, happiness, and freedom—would be free of much of the hunger, starvation, pestilence, and tryranny that now exist.

In almost every small niche and cranny of everyday life, the need for education is being stressed. This was emphasized to me unexpectedly when recently I was buying a new power lawn-mower of an unusual type.

"Is this likely to break down often or need many trips to the repair shop?" I asked the lawn-mower dealer.

"Not if you learn how to operate it properly!" he exclaimed. "You've also got to learn how to make a few adjustments, and then tend to them regularly and conscientiously.

"My shop repairs thousands of lawn-mowers a year," he continued, "and here's one thing that we've learned. Nine out of ten broken-down lawn-mowers that come in here are busted only because their owners abused them greatly or never learned how to take care of them."

Those words made me wonder what percentage of breakdowns of commercial-industrial oilburners are caused by the ignorance and neglect of the building superintendents, janitors, and maintenance men supposed to keep oilburners and other boiler-room equipment in tip-top shape.

As you drive through the streets of New York City, you go by some of the tens of thousands of apartment houses provided with heat and hot water by oilburners. Representative houses contain about 20 to 60 apartments, and have steam boilers equipped with horizontal rotary-cup burners firing from eight to forty gph of No. 5 or No. 6 oil.

In addition, in the past decade there's been a trend towards the use of commercial-size gun-type burners capable of using No. 4 oil or No. 5 oil. (In New York City, almost all of these actually use No. 4 oil.)

Any oilburner enthusiast who visits the boiler rooms of these New York apartment houses finds that in general the equipment, including the burners themselves and their controls, is not in excellent condition and is not being given good maintenance attention.

Needing photographs of equipment for magazine articles and other uses, I always travel with a camera. During one month I visited 44 New York boiler rooms in apartment houses; in only two of these did I find equipment of appearance and condition creditable enough to permit taking photographs.

No statistics are available on this, but I would estimate that at least one-third of the service calls to these commercial-industrial oilburner installations are caused by neglect of the equipment—by poor maintenance.

No statistics are available on this either, but chances are that the oil bills of most of these apartment houses are 10% to 20% higher than they should be, because ignorance and neglect keeps the boiler-room equipment in sorry condition.

Evidences of much more waste of oil than that—evidence of as much as 30% of the heat in the oil being wasted—is apparent in many of the boiler rooms. Here are a few examples. Accompanying a serviceman at the request of his boss (and with hopes of getting photographs), in one Harlem apartment house I saw that all four firing doors of two 50 horsepower coal-designed boilers were halfway open.

Nudging the serviceman, I pointed out, "Those open doors represent the waste of thousands of gallons of fuel-

oil a year. Their being open that way undoubtedly lowers the CO_2 to about 3% or 4%; the stack temperatures of the boilers must be above 550°F., and could be 650°F."

The serviceman went off to find the building superintendent, and to ask him about the open firing doors.

Apparently the superintendent was not greatly interested in the boiler room, for the serviceman returned alone to report to me, "The super says that when he closes the boiler doors, sooner or later they are blown open again anyhow by slightly explosive start-ups of the burners. Besides, things are not safe if the doors are closed so tightly that a starting puff can't open them. He says that aside from that he likes to keep the doors open wide enough so that he can see the oil flames and know they are big enough and not smoky."

I told the serviceman it was our duty to go to the superintendent and instruct him on the importance of keeping the boiler doors closed. We did that. I explained how large springs could be installed to keep them closed, yet permit them to open momentarily for a bad start-up "puff."

A few months later, the serviceman and I went back to the same apartment house accompanied this time by the owner, who had started a fuss because his oil bills were greatly excessive he thought. This time all four firing doors were nearly wide open.

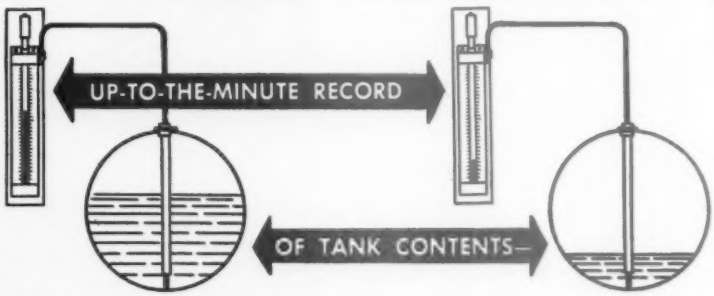
Challenged about this, the building superintendent lied, "You never told me nothing about that. I didn't know that having those boiler doors open could waste any oil."

Changes and Results

As we could do this because the owner of the building was with us and anxious to cooperate, we arranged at once to have the springs installed on the four firing doors to keep them closed. With the owner's blessing, in fact with him begging us to take all possible steps to avoid waste of oil, we used our own ideas about setting the knobs of the Heat-Timer system used to control the amount of heat in the building, and we put a padlock on the cover of the control box . . . only the serviceman and the owner were to have keys to the padlock.

We lowered the setting of a reverse-acting steam-pressure control of the Heat-Timer system. The serviceman adjusted the two oilburners painstakingly for once, using combustion-testing instruments. He had the owner's assurance for the first time that the superintendent would not change any oilburner or control adjustments.

During the next three winter months that followed, the owner told me later, he had only nine complaints about insufficient heat from the occupants of the 65 families in the building. He himself checked out each complaint and found it without just cause. Tenants who had gotten accustomed to temperatures of nearly 80°F., provided in the past by the building superintendent, were dissatisfied at first to live in rooms heated to only the range of 73°F. to 75°F.



with

PETROMETER

***Remote Reading* TANK GAUGES**

Here's the gauge that gives you accurate readings—clearly visible—absolutely dependable. A quick glance at the gauge tells you the *exact* quantity of liquid in your tank—in inches of depth and in gallons, pounds or any other volume or weight units.

The Petrometer operates on the principle of static pressure. There are no pulleys, wires, springs, or electrical mechanisms to go out of order. Operation is simple and reliable.

INSTALLATION? IT'S EASY—

These gauges can be installed on tanks above or below the ground and up to ¼ of a mile away. The tank assembly unit can be installed even when there is liquid in the tank. The single copper tube line from the tank is connected to the gauge by one simple compression connection. No setting up or adjusting is required on the job.

PETROMETER GAUGES ARE IDEAL FOR:

Commercial and Industrial fuel oil storage tanks

Petroleum Bulk Storage

Storage tanks for chemicals, solvents and other industrial liquids.

Write for Bulletin PF for details.

8

PETROMETER CORP.

43-22 Tenth St., Long Island City 1, N. Y.

But, the owner reported to me, the oil consumption had been dropped about 25%, and would run only about 43,000 gallons of No. 6 oil a year, instead of about 63,000 as it had been running when he complained.

In another instance, oil was wasted because a janitor tied shut a draft regulator on a smokepipe. He said its banging had annoyed a first-floor tenant located over the boiler room. He also had decreased the firing rate of the burner firing an 80 horsepower boiler so there'd be less flame sound to disturb the same tenant.

Many large installations using No. 6 oil are equipped with indirect fuel-oil heaters located under-the-water-lines of low-pressure steam boilers. Many of these heaters will have clogged waterways and will fail to

There's a space to be filled in to tell the proper SAE viscosity of the gear-case lube oil, in this table. Most rotary-cup burners need 30 SAE viscosity oil, but some need oil of other viscosity, according to their manufacturers. The maker of one rotary-cup burner says it should be given 90 SAE viscosity oil.

OIL BURNER INSTRUCTIONS

Every Day—

1. Clean atomizing cup. Use only kerosene and rags. Do not use a screwdriver, file, or other tools—because an atomizing cup even slightly knicked or dented should be replaced at once.
2. Make certain the oil flame is not smoking. The flame should be "full" and "rich," not skimpy and lean. It must be large enough. But no smoke!

Every Week—

1. With the oil burner not running, look into its oil cup on the side of its gear case. This cup should be full of lubricating oil—when the oil burner is not running. Use only automobile engine oil of SAE ———— viscosity.
2. Start and stop the burner. Watch it. Make certain it performs properly.
3. Clean the suction-line fuel-oil strainer. A high reading on the vacuum gage at the strainer tells you to clean the strainer.
4. With the oil burner running, blow down the low-water control thoroughly. Make certain this stops the burner.

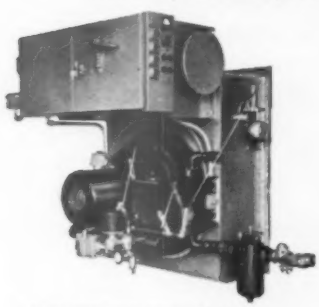
Every Two Months—

1. Lubricate properly the bearings of the oil burner motor, and of all other motors in the boiler room.
2. Inspect the two drive-belts of the oil burner. Tighten loose belts. Keep at least two, new spare belts on hand. Always install two new belts.
3. Clean dirt and muck from the air-intake openings of the oil burner. Clean out the air-intake openings under the firebox floor.
4. Flush mud and sediment from the mud legs of the boiler. Keep the blow-down valves wide open until the water runs clear. If you have a fuel-oil pre-heater located under-the-waterline, flush it out thoroughly.

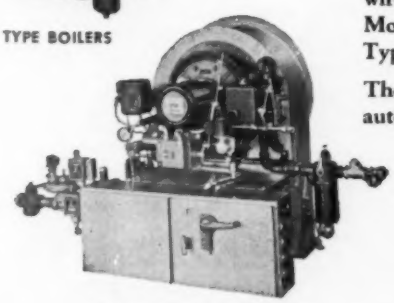
These Points Are Important At All Times—

1. The boiler flues or tubes must be cleaned often enough. Smokepipe also!
2. The water-line of a steam boiler must be kept at the proper level.
3. For safety and efficient use of fuel oil, keep tight-closed the firing door or flame-observation door of the boiler. Keep boiler doors closed!
4. Don't run out of fuel oil!
5. If a fuel-oil drip develops, keep a pan under it—until it's repaired.
6. Keep covers on all electrical controls and junction boxes.
7. Be ready to replace a burned-out fuse, with a new fuse of proper size!
8. Learn the purpose and use of very device in your boiler room—every valve, switch, electrical control, gage, thermometer, re-set device.
9. Learn the usual, proper reading of each gage and thermometer.
10. If an oil burner seems to be giving trouble, don't permit it to run by itself, unattended. Either stay with it, or turn it off!

For maximum Heating Economy... **JOHNSON FORCED DRAFT** *Package Unit* **BURNERS**



FOR FIREBOX TYPE BOILERS



FOR SCOTCH TYPE BOILERS

Get Smooth . . . Quiet . . . Exceptionally Efficient Combustion regardless of Stack Conditions and Firebox Pressures!

These compact burners are available for firing on Oil only . . . Gas only . . . and for Combination Oil or Gas firing. With either fuel, they deliver low-cost heating with a minimum of servicing and supervision. There's a size for every heavy-duty heating need, from 28 HP to 560 HP.

These "package-unit" burners come to you completely assembled, wired and tested . . . ready for quick, inexpensive installation. Models are available for use with either Scotch Type or Firebox Type boilers.

They are powered by the world famous Johnson 53 Burners which automatically maintain a fixed air-fuel-ratio regardless of variations in oil viscosity . . . thus insuring easier, faster "cold starts" when the oil in tank and fuel lines is cold and hard to pump. If you seek truly fine performance and low operating costs on your big heating jobs, by all means check up on these Johnson Forced Draft Burners.

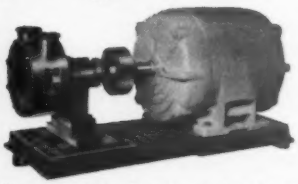
Johnson Burners

S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
Church Road, Bridgeport, Pennsylvania

Builders of fine Oil Burner Equipment since 1903

KRAISSL PUMPS

YOU NEED a Kraissl Class 60 direct-drive pump . . .



When oils of No. 2 to No. 4 viscosity are handled, a pump that operates at direct-motor speeds is frequently the proper choice. With the new Kraissl direct-connected Class 60 pump, speeds of 1200 or 1800 rpm can be used on light oil—without developing undesirable cavitation.

Fig. 1, below indicates high suction lift characteristics of the class 60 pumps. Note only slight reduction in capacity with increasing vacuum. Fig. 2, shows typical data based on 150 S.S.U. oil. Small figures on curves are suggested motor HP at the pressures indicated.

Let our engineering department make specific recommendations to fit your pumping needs.

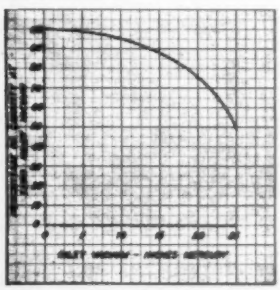


FIG. 1. VACUUM-CAPACITY CHART

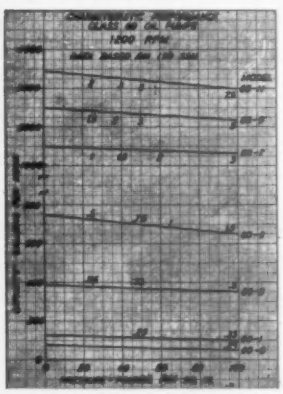


FIG. 2. PRESSURE-HORSEPOWER CAPACITY CHART

Write for Bulletin 1904

KRAISSL CO. Inc.

295 Williams Ave.,
Hackensack, N. J.

COMMERCIAL & INDUSTRIAL oilburning

heat the No. 6 oil sufficiently, if not blown down fairly regularly, perhaps once every two months.

A certain serviceman tells about one apartment house in which he himself has to blow down the fueloil indirect heater of this type . . . else it's never blown down and cleaned of sediment and scale. His often-repeated instructions to the janitor have no effect, this serviceman says. The janitor simply never blows down the heater, even when it's so clogged that the oil comes from it at 110°F. instead of the 155°F. it should, and therefore the oilburner is giving trouble.

Four years ago, I was involved in an incident of sadness. The superintendent of an apartment house heated by two steam boilers failed to blow down his two low-water controls. He must have neglected to do this for about a whole year, to judge from the condition in which the controls were found.

The water-line of a boiler dropped greatly. Because its float was stuck in a high position by scale beneath it in the float chamber, the low-water control on the boiler failed to stop the oilburner firing the boiler. Damage was great, for the front crownsheet of the boiler, as well as its firetubes, needed replacement. The repairs amounted to more than $3,000.

The janitor declared that the serviceman who had given him instructions when the oilburners were installed had not told him to blow down the low-water controls every two weeks. He said that servicemen who regularly adjusted and repaired the oilburner equipment had never mentioned to him the need to blow down and test the operation of the low-water controls.

To top things off, the superintendent pointed to two sets of oilburner instructions posted in the boiler room, one issued by the manufacturer of the oilburners, the other

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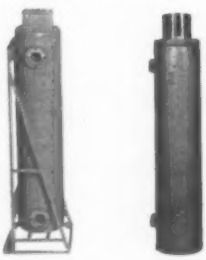
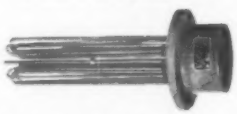


CIRCULATION HEATERS



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Write for new fuel oil heater catalog V.O.700.

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issued by the company providing the fueloil for the building. Neither of the two sets of instructions contained one word about the need to blow down a low-water control regularly. I was involved because I had gone over these instructions several times with the superintendent, and had not added to them instructions needed in this particular boiler room about low-water controls needing regular attention and testing—cleaning out of float chambers.

I told the owner of the building, a close friend as well as a client, that I'd often mentioned verbally to the superintendent that the low-water controls needed proper attention from him every two weeks. The superintendent said that I had told him nothing about this.

That unfortunate incident, and incidents of the other kinds which have been reported in this article, caused me to switch to better tactics for trying to educate building superintendents, janitors, and maintenance men supposed to keep boiler-room equipment in good condition.

Written Instructions

My new tactics include telling these men verbally about the daily, weekly, monthly, and yearly steps they must take to keep their equipment operating properly and in good condition—and also posting on the boiler room walls complete written instructions in which every single maintenance step is clearly and simply listed.

This I find to be more than somewhat effective for educating janitors:

1. Post on the boiler-room wall complete instructions. Make the instructions so complete that if they are followed the equipment receives every bit of attention it needs. Do not omit from the instructions one single step that should be taken to maintain the equipment properly. The writer of the instructions is to blame if following the instructions to the letter results in equipment trouble or damage, caused by lack of proper maintenance.

2. At the time you post the instructions, read them through, loudly and clearly, to the man or men supposed to follow them. Demonstrate each maintenance step, as you read it

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aloud. Then have the janitor go through the same step. Don't assume the janitor can understand simple English, as you find many who cannot!

3. Periodically, perhaps once every two months for the first six months the equipment is in use, and from then on about once every six months, visit the boiler room accompanied by the janitor, and direct his attention to your posted oilburner instructions. If in doubt about the instructions being understood and followed out to the letter, go through them again as described above in paragraph 2.

If you find the need to issue a new order to the janitor, to give him additional instructions, don't fail to write this out and add it to the instructions you prepared originally for the particular installation.

This system for instructing janitors gives you protection against a janitor's telling his boss, the building owner or operator, that a breakdown occurred or damage was done because he was not given proper instructions. If you are supposed to give him complete and proper instructions, make certain you do this. To make certain you can prove you did this, post your instructions in writing on the wall of the boiler room.

In the April, 1959 issue of FUELOIL & OIL HEAT, on p. 72 (and reproduced elsewhere in this article) and as part of my article, "Instructions for Superintendents," appeared the instructions I post in boiler rooms having horizontal rotary-cup burners of the belt-driven type using No. 6 oil, and firing low-pressure steam boilers.

It's been gratifying to learn that several oil companies have turned to the use of these instructions since their appearance.

❖

Fuels Status Meeting Planned by Fuels Division of ASME

A THREE-DAY symposium on fuels to be held in June 1962, is being organized by American Society of Mechanical Engineers.

Preliminary arrangements are being handled by W. T. Reid; questions about the symposium may be addressed to him at Battelle Institute, Columbus, Ohio.

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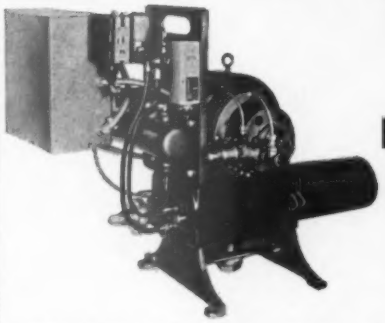

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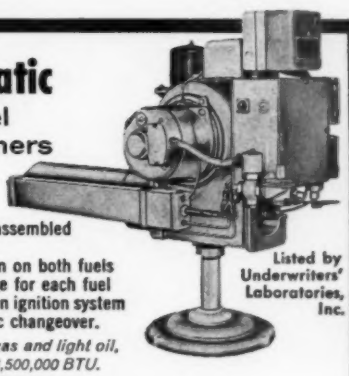

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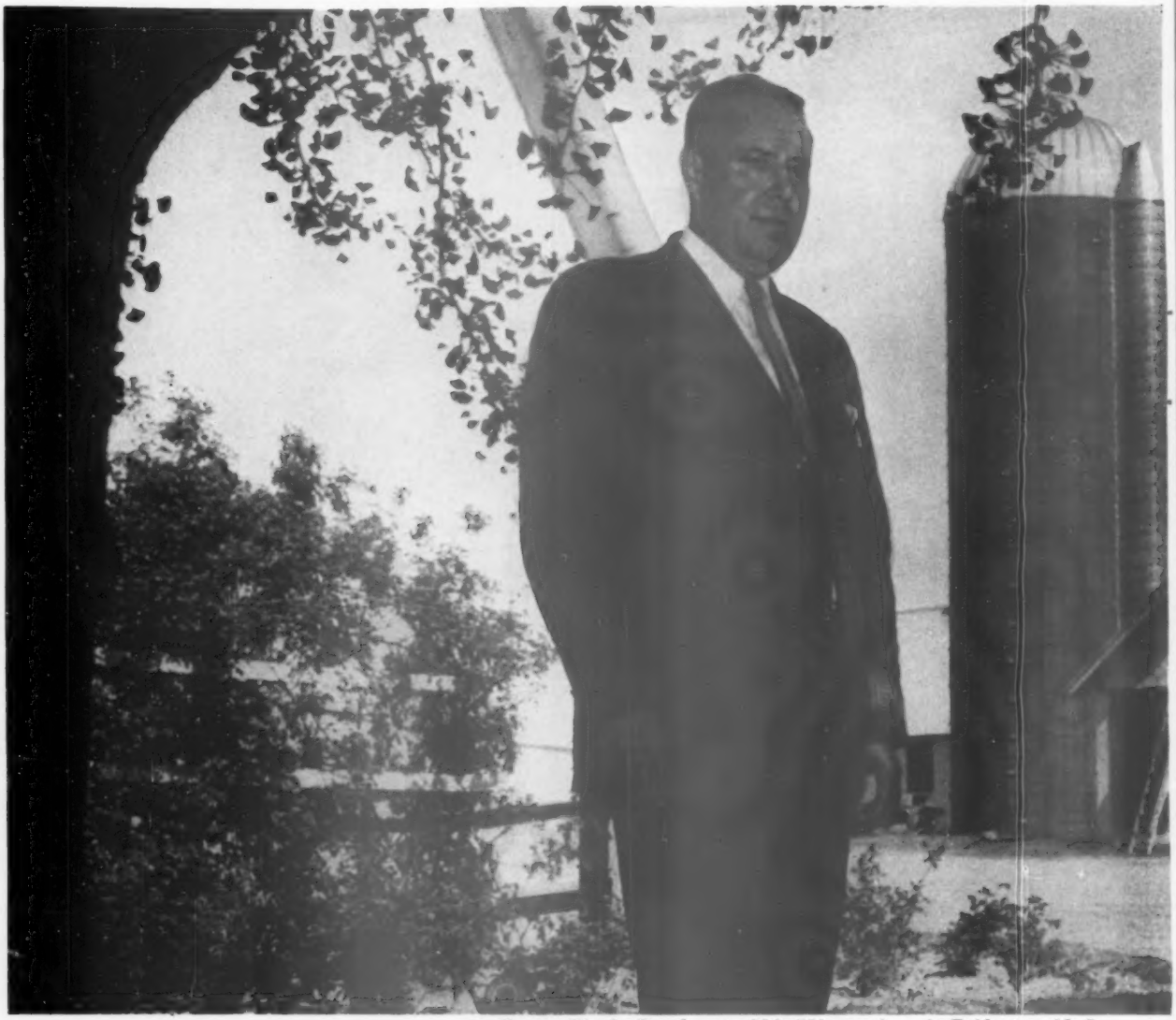

George Woodruff and part of his 750-acre farm in Bridgeton, N. J.

Gulf Solar Heat Dealer...a

George Woodruff and Charles Tobin, Gulf Home Heating and Farm Marketer, in the well-known Woodruff Museum. Over three thousand people visit this vast collection of Indian relics every year.

GEORGE WOODRUFF has a formula for good living. He mixes heating oil with farming know-how, family history and his hobby . . . archaeology. A 750-acre farm, 450 acres of it under cultivation, dates back 300 years in the Woodruff family.

125 purebred Holstein cattle provide over 2000 pounds of milk every day. George has been able to locate and assemble some 13,000 American Indian relics while pursuing his archaeological hobby. He's even had time to supervise the landscaping of the local golf course. His two sons, Alan and Bob, help him run the heating oil business.

Woodruff trucks have been carrying Gulf heating oil for over 29 years.

Real Country Gentleman

The general feeling around the Woodruff household is that they would have less time to devote to other projects if they handled any other brand. George says, "You just can't lose with a top product and first-rate promotion. I don't think I have one dissatisfied customer."

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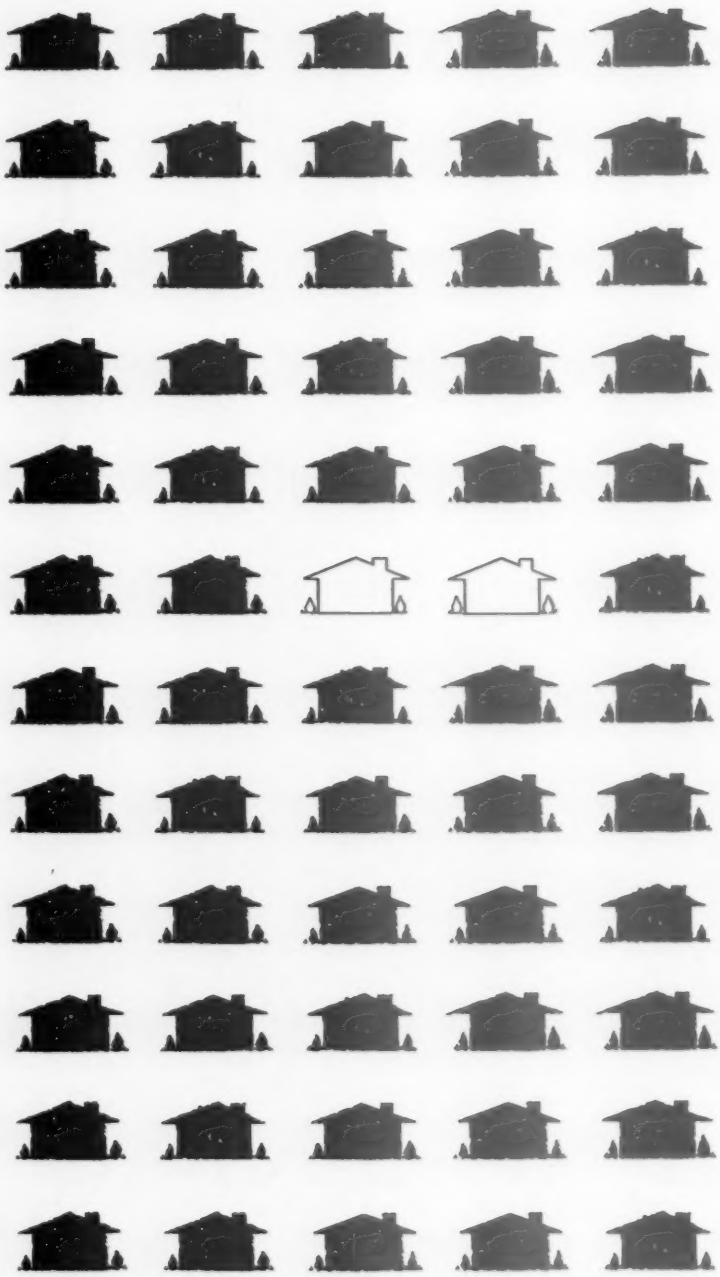

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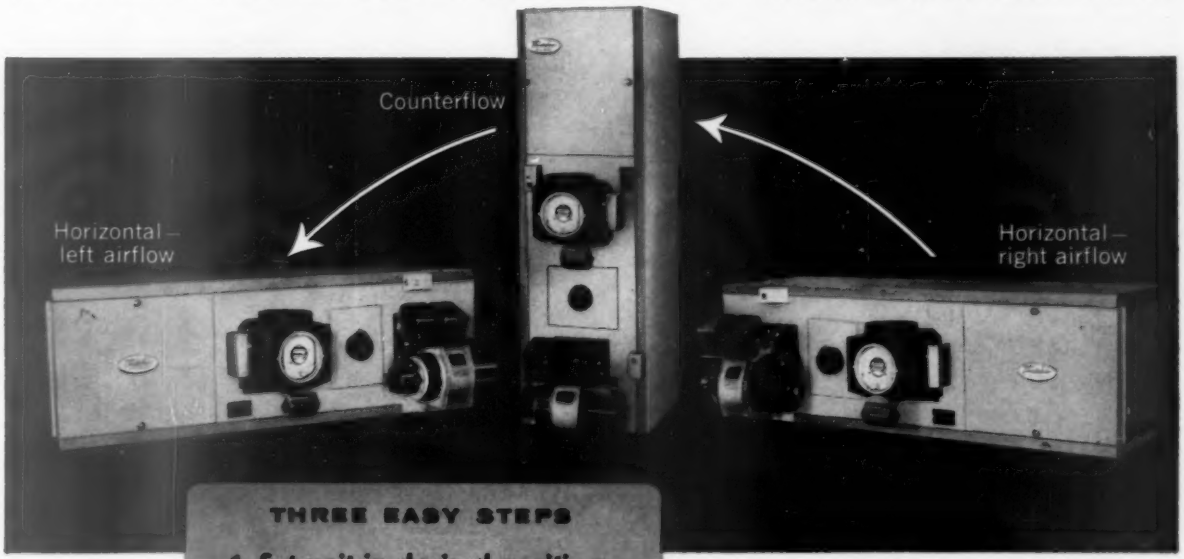

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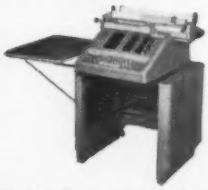

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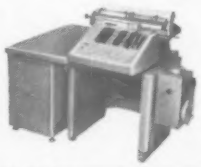

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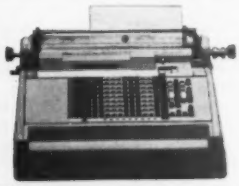

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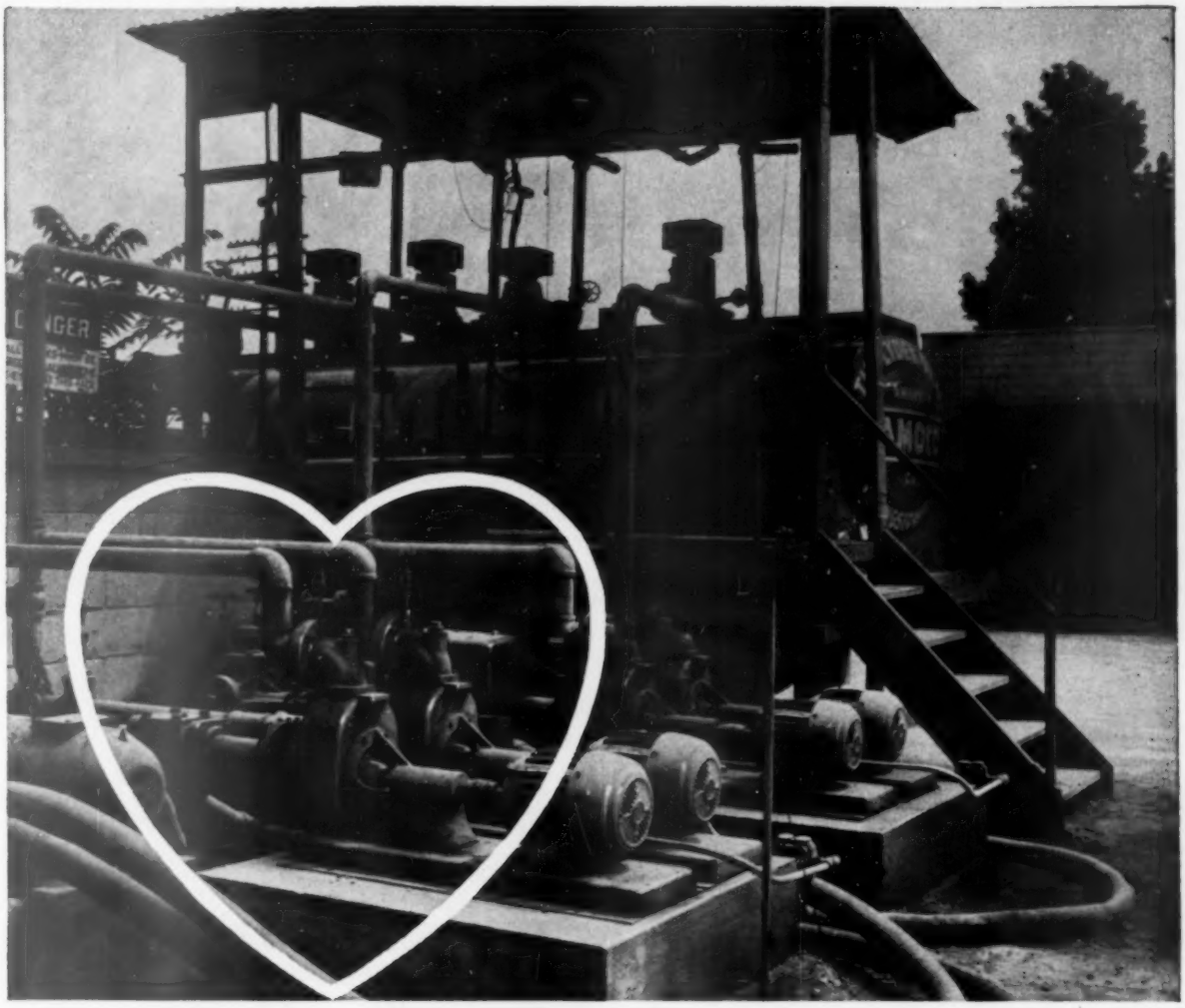

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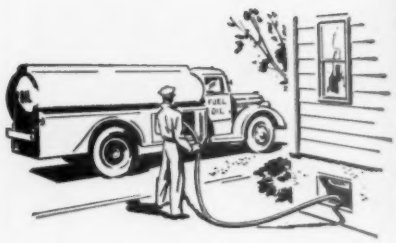

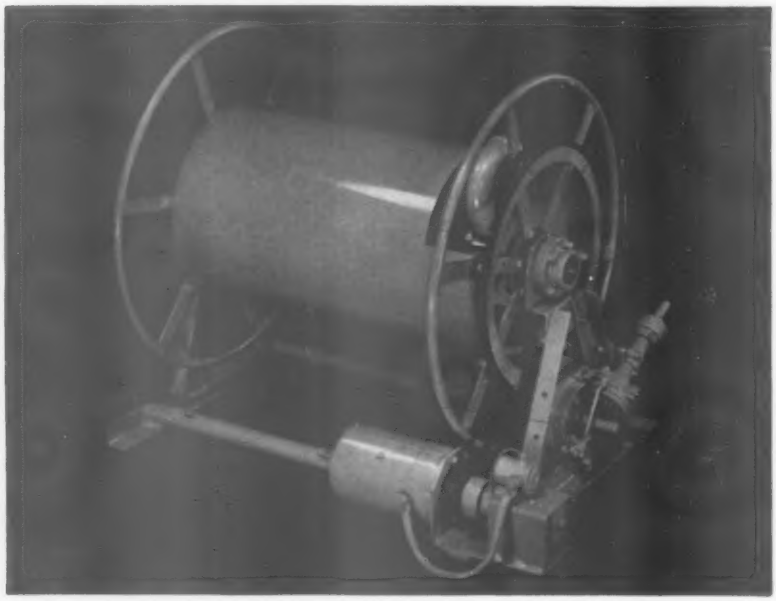

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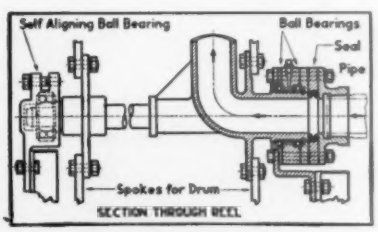

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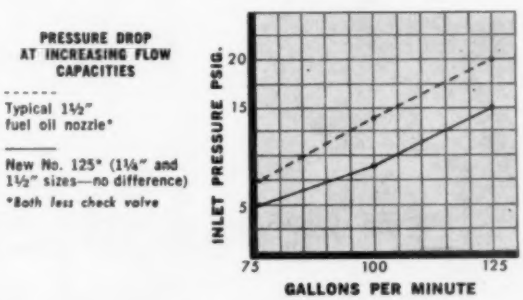
- Permanent lubrication of bearings; grease-sealed at factory.

To you, time is money — and increased delivery capacity of your equipment adds to the number of stops your trucks can make per day. This new Buckeye combination is the only such system designed to give you low pressure drop at flow rates up to 125 gpm—virtually an "open pipe" system. Write for more information or contact your Buckeye distributor.



Buckeye **BUCKEYE IRON & BRASS WORKS**
Box 883 • Dayton, Ohio

fuel oil & oil heat

MANUFACTURERS ACTIVITIES

Standard Mfg. Co. buys Automatic Humidifier Co.

THE STANDARD MFG. CO., Cedar Falls, Iowa, has acquired the Automatic Humidifier Company, also of Cedar Falls, which it will operate as a division.

The manufacture of the Automatic Humidifier Company's line of Vaporite humidifiers will be continued and plans are being formulated for product research and improvement, as well as an expanded sales program, according to M. K. Voorhees, vice-president and sales manager. J. Harold Galloway, president of Automatic Humidifier, has joined Standard as consultant in product development and marketing.

The same factory representatives who handled the Automatic Humidifier line will represent Standard Manufacturing. They are: Lou Reining, Chicago, Ill.; Mercury Sales Co., Syracuse, N. Y.; Lincoln Air Controls Inc., Havertown, Pa.; Southern Oil Burner Co., Charleston, S. C.; Frank Hickey, Worcester, Mass.; S. R. Quincy Co., Dallas, Tex.; Robert S. Ambrose & Associates, Kansas City, Mo.; H. R. Pataky Sales Agency, Lima, Ohio.

Harold Galloway, president, Automatic Humidifier Co., confers with M. K. Voorhees, vice-president and sales manager, and R. W. Voorhees, president and treasurer, Standard Mfg. Co., on plans for new product development.

HAGO PRODUCTS

1120 GLOBE AVE., MOUNTAINSIDE, N. J.

***IN CANADA* — RICHARDSON, LTD.**

1169 Caledonia Road, Toronto

Eckhart Manufacturing names new sales Representatives

DUMORE HEATING Sales Co., Williamsport, Pa., and M. J. Eklund, Seattle, Wash., have been named sales representatives for Korth oilburners, oilfired hot water heaters and steel boiler-burner units. Ecklund will represent Eckhart Mfg. Co., Inc., Union, N. J., in the Pacific Northwest and Dumore will be the company's representative in northeastern Pennsylvania.

Oil heat's Advantages Shown at Iron Fireman's Meetings

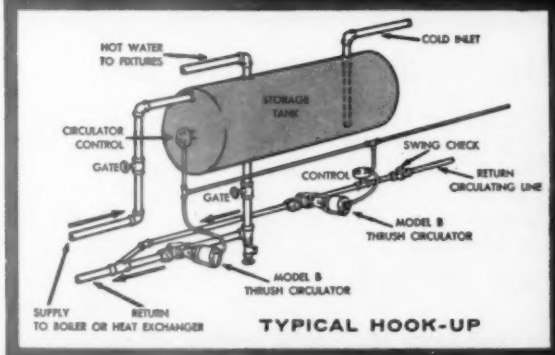
THE IRON Fireman Mfg. Co., Cleveland, Ohio, has launched a campaign to push fueloil and oilheating equipment. The heart of this program is a series of meetings arranged through Iron Fireman distributors for fueloil dealers and oil heat equipment dealers where the advantages of fueloil and the Iron Fireman Custom Mark II oil furnace and boiler are driven home.

As a part of this program, meetings were recently held in Pittsburgh, Pa.; Youngstown and Akron, Ohio;

Announcing the NEW

THRUSH BRONZE CIRCULATOR

for fresh water use...



TYPICAL HOOK-UP

Here's the newest member of the Thrush family of highly efficient Water Circulators . . . with bronze housing and all parts in contact with water, non-corrosive. Detail at left shows domestic water application.

To be sure of long trouble-free service and complete customer satisfaction, install Thrush Circulators. They have proved themselves dependable for over thirty years. See your wholesaler today or write Dept. C-7.

Quality Hydronic Heating Specialties

H.A. THRUSH & COMPANY
PERU, INDIANA

THRUSH

Wheeling, W. Va. These four meetings were conducted under the direction of Warren J. Blanke, marketing manager, and Stanley MacMichael. district sales manager, both of Iron Fireman. The illustration shows Blanke addressing the Wheeling meeting; 81 dealers attended.

Newspaper ad Mats available free to Palm Beach Dealers

THE NATIONAL Modulation Company, St. Paul, Minn., manufacturers of Palm Beach Comfort Control Systems, has announced the institution of a newspaper ad mat service.

These mats are available, free, to Palm Beach dealers, who may imprint their own firm name and additional advertising messages in the body of the ad.

General theme of the ad copy sells the Palm Beach concept, designed to regulate blower operation on warm air furnaces to eliminate up and down heating.

Sunoco heating Oil is new brand Name of Sun's Product

SUN OIL CO. announced its decision to market their heating oil under the name of Sunoco Heating Oil which will replace Sunheat as this company's brand name. The change is aimed at capitalizing on existing consumer acceptance of the Sunoco name.

The switch will be a gradual one to eliminate as much as possible confusion and waste. Sales aids using the new brand name already are available to distributors.

Thatcher Furnace elects Russell Cook, president

RUSSELL M. COOK has been elected president, Thatcher Furnace Co., Garwood, N. J., succeeding Carl Sahler, resigned. Cook has been with the firm for 35 years in various capacities, most recently as vice-president in charge of sales.

Stuart B. Leigh has been named to the newly-created position of executive vice-president.

NO DOUBT ABOUT IT!

DYNATHERM

The excellence of Hydronics

is the HOTTEST unit on the market today!

And all because Dynatherm was designed to get the most out of every drop of oil, giving greater efficiency—and saving your customers 40% in fuel bills—enough for Dynatherm to pay for itself in five years. Areas are still open for Manufacturers Representatives . . . Wholesalers . . . Dealers. Phone or write us today.

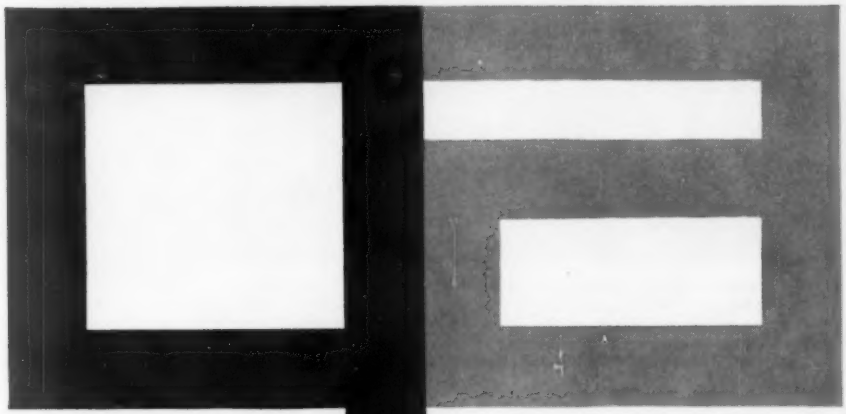
*IMP—Important Money Preserver!

THE FINEST OIL HEATING UNIT IN AMERICA!

manufactured by the DYNATHERM DIVISION

BETHLEHEM FOUNDRY & MACHINE COMPANY

225 W. 2nd St., Bethlehem, Penna. Phone: Bethlehem, Pa. UNiversity 7-4605 • Chicago, Ill. HUdson 3-0520



Q—What's so good about being a branded heating oil distributor?

A— Plenty. When you're drumming-up new business, a strong, recognized brand helps you get your foot in the door.

Contrary to some beliefs, a brand and single source of supply put you in a more enviable position. You become more important to your supplier. Your business needs get closer attention.

Continued customer satisfaction is vital to you. With a single source of supply, you get consistent product quality, and you know *who* is responsible for it.

By building strong branded distributors, a supplier, of course, is broadening his market. So he sticks close. *You* get the benefit of *his* total brand marketing effort: better sales methods from his new business research; modern delivery techniques and facilities; advanced business training for your employees; consistent national and hard-hitting local advertising that sells your company and your name.

Q—Are these benefits automatic with being a branded distributor?

A— Not necessarily. It depends on the brand you go with.

For details, call or write our nearest Regional Office:
Philadelphia, Pa.
Pittsburgh, Pa.
Providence, R. I.
Syracuse, N. Y.
Charlotte, N. C.

ATLANTIC
HEATING OILS

THE ATLANTIC REFINING COMPANY

Display maintained by Stewart-Warner Corp., Heating and Air Conditioning Div., Lebanon, Ind. The animated, audible display is located in the Indianapolis Weir-Cook airport; it shows the major products of the Stewart-Warner Division. Translight photos in front of each unit illustrate hidden construction features and postcards are available for those who want to request product information.

General Filters offers Special on Moisture-Matic Humidifiers

BANK NOTE COUPONS have been distributed by General Filters, Inc., Novi, Mich., as part of its special offer on Moisture-Matic Model 800 furnace humidifiers.

The dealer only has to fill in the coupon with his name and address, take it to his jobber. The coupon constitutes an order for five humidifiers for which the dealers receives a factory-packed order of six. The dealer pays for the five, gets six.

Dealers can redeem as many coupons as they please during the offer which lasts until October 15.

Minneapolis-Honeywell holds heating control Carnivals

A SERIES of "Control Carnivals" have been held throughout the northeastern part of the nation by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

The carnivals planned as business-social events were started last fall to give large groups of dealers an opportunity of seeing on-the-spot demonstrations of Honeywell controls, according to Fred Kaiser, vice president in charge of the eastern region.

Perfection names Wholesalers for Heating, Airconditioning

FIVE WHOLESALER distributors have been named by Perfection Div., Hupp Corp., Cleveland, Ohio. Each will handle the complete Perfection line.

The firms are: Capitol Supply Co., Jefferson City, Mo.; C. L. Miley Co., Indianapolis, Ind.; Braid Electric Co., Nashville, Tenn.; Hart, Inc., Minneapolis, Minn.; Otten Htg. Co., Buffalo, N. Y.

• A NEW ZONE CONTROL VALVE THAT DARES TO BE BEST •

Hydrozone® outlasts... out-performs other zone valves 12 to 1!

The weight alone tells you that this is a zone control valve that's designed to last a lifetime! Heavier, sturdier . . . Hydrozone® Motorized Valves provide rugged, consistent performance up to twelve times longer than other zone valves.

COMPACT, UNITIZED CONSTRUCTION • OPERATES IN ANY POSITION • MANUAL OPEN-CLOSE ADJUSTMENT • RUGGED ANGLE VALVE DESIGN • TIGHT-CLOSING SILICONE VALVE SEAT • QUIET OPERATION • LEAK-PROOF SEAL CONSTRUCTION (PAT. PENDING) • DUST-PROOF HEAVY ALUMINUM MOTOR CASE • SELF-ALIGNING, LIFTING STAINLESS STEEL VALVE STEM • LIFE-TIME LUBRICATION • IN-BUILT UNION CONNECTION SUPPLIED

Another quality product of
INDUSTRY'S WIDE, WIDE LINE

A. W. CASH VALVE MFG. CORP.
666 E. Wabash Ave.
Decatur, Illinois

CASH AUTOMATIC VALVES ACME

GOING-GOING-GONE

THEY SELL!

Klemm® MICRO FUEL OIL FILTERS

KLEMM FUEL OIL FILTERS never stay long on your shelves. Good design and performance, attractive packaging and prices make them sure-fire best sellers . . . the kind that puts profit in your pocket. Always stock KLEMM . . . they sell!

PK-150 U/L

JR-60

FF-430 U/L

FF-430G

Millions Since 1932

KLEMM PRODUCTS

Division of

KLEMM AUTOMOTIVE PRODUCTS COMPANY

1722 North Damen Avenue • Chicago 47, Illinois

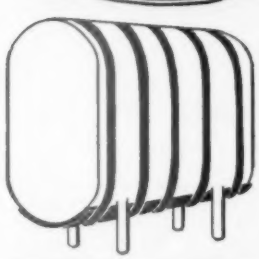
EXPORT: Guiterman Co., Inc., New York 4 CANADA: Elgee, Ltd., Toronto

SEND FOR complete literature and prices. Do it today.

STOP TANK LEAKS -PERMANENTLY

ONE MAN CAN DO THE JOB IN 30 MINUTES

FIVE YEAR GUARANTEE



with SID HARVEY'S TANK BOTTOM

Seals entire bottom of any 275 gallon vertical oil tank.

Stop tank leaks in one service call.

SID HARVEY INC.
VALLEY STREAM NEW YORK

AVAILABLE AT 50 SID HARVEY STORES OR BY MAIL

Penn Controls, Inc. builds new West Coast Headquarters

TEMTROL DIVISION of Penn Controls, Inc., Goshen, Ind., has completed and occupied a new building at Costa Mesa, Calif. The new plant becomes the headquarters for the West Coast operations, and will house Penn's Los Angeles district office.

The Temtrol Division manufactures controls for appliances, heating and for industrial applications. New products, suitable for the new facility, will be added to the line from time to time. In addition to adequate room for expansion, the new plant will provide space for warehousing Penn's complete product line for West Coast customers.

We Go Together...*

...and what an ideal pair!

STEINEN NOZZLES (0.5 to 1.0 GPH) are now equipped with POROUS BRONZE FILTERS as standard AT NO EXTRA CHARGE.

STEINEN Mirror Finish Nozzles and Porous Bronze filters . . . DOUBLE VALUE for your money.

The new cone shaped, one piece Porous Bronze Filter designed for longer wear and greater filtering ability offers an additional advantage in its firm (metal to metal) seal.

STEINEN Mirror Finish Nozzles now combine maximum heat deflection with greater filtration, resulting in minimum coking, gumming and clogging. All STEINEN Nozzles are *individually* spray tested for flow, angle and concentricity. For added protection and easy identification each nozzle is packed in dirt-free plastic containers with color coded lids . . . QUALITY PRODUCTS thru QUALITY CONTROL.

Hand in Hand . . . Porous Bronze Filters and STEINEN Mirror Finish Nozzles are your best bet . . . your best buy. Try them today.

Write today for your free catalog "Heating Products by Steinen".

STEINEN

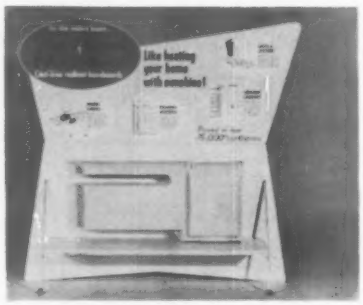
WM. STEINEN MFG. CO.
HEATING PRODUCTS DIVISION — DEPT. A-9
43 Bruen St. • Newark 5, New Jersey

Fuel units Topic of Carlin's current "Facts 'n Figures"

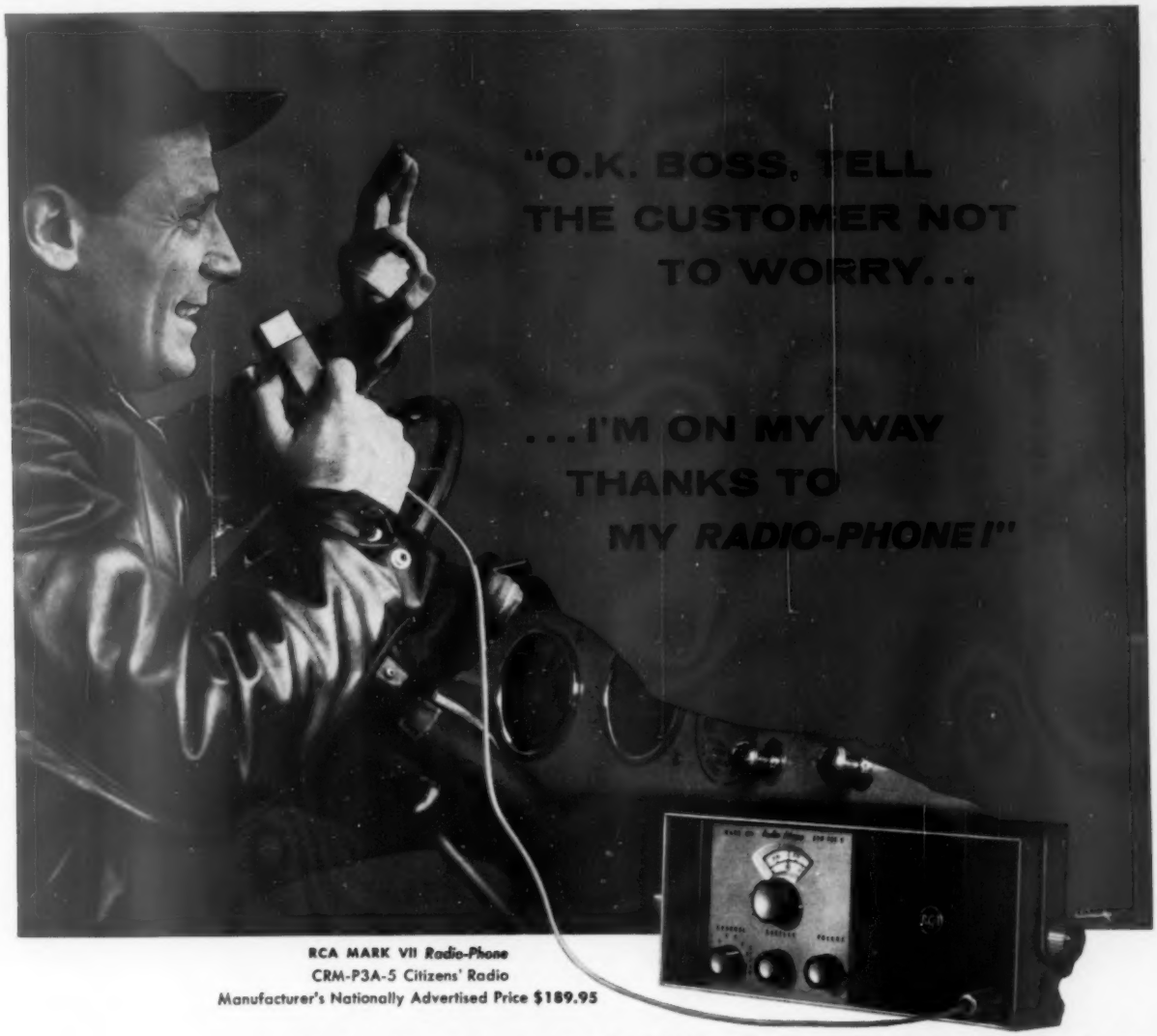
FUEL UNITS for oilburners, both single and two-stage, are the subject of the current issue of "Facts 'n Figures," quarterly publication of The Carlin Co., Wethersfield, Conn.

The bulletin covers operation and servicing, tells how to check for pressure and vacuum, gives correct line sizes for two-pipe installations and many helpful facts on fuel unit performance to achieve maximum oilburner efficiency.

Copies may be obtained from Carlin wholesalers or by addressing The Carlin Co., 912 Silas Deane Highway, Wethersfield, Conn.



The above counter or window display which converts in one motion to a dealer-salesman's demonstration kit with handle has been designed by Burnham Corp., Irvington, N. Y. The display gives the customer a clear understanding of a Base-Ray baseboard installation and how it blends into the decor of a room.



RCA MARK VII *Radio-Phone*
CRM-P3A-5 Citizens' Radio
Manufacturer's Nationally Advertised Price **$189.95**

Small business or large . . . there's an RCA radio system designed to fit your needs. For reliable short range communication, there's the sensational new RCA Mark VII Radio-Phone! This low priced, high quality 2-way radio gives you contact with the "man-in-the-truck" . . . saves precious minutes on the road and paves the way for lasting friendships with your customers. The Mark VII can be used at mobile or fixed points—for truck and office. Provides four crystal-controlled channels for transmit and receive; also manual receiver tuning for all 23 channels. No operator's exam is necessary—all you need is the easily obtainable FCC Citizens' Radio License. Units available for 6- or 12-volt battery operation. Also operates off house current.

For information on the Mark VII Radio-Phone—and other quality RCA communications equipment—contact your RCA mobile radio specialist, or write RCA, Dept. L-252, Building 15-1, Camden, N. J.

RCA 2-WAY RADIO

RCA'S FIRST NAME IS "RADIO"

RADIO CORPORATION of AMERICA
COMMUNICATIONS DIVISION — CAMDEN, N. J.

Tmk(s) ®

RCA RADIO SYSTEMS FOR EVERY BUSINESS REQUIREMENT

Flexible Lease and Purchase Plans Available

"LD" Transistorized Mobile Radio—Quality communications equipment for greatest signal coverage, finest performance, top dependability.

Personalfone "Belt" Radio—Miniature 2-way radios that provide person-to-person communication with personnel on foot.

Carfone Mobile Radio—Performance-proven in thousands of commercial, industrial and municipal applications.

fuelоil & oilheat

Readers' Problems

Q. One cause of nuisance service calls, which are annoying and which in the cases of oil customers we can't always charge for, is noise and sound from the pipes of steam heating plants. Usually the sounds occur after room thermostats start burners, and steam first reaches the radiators, starting to make them hot.

New in the last year at servicing burners, I wonder if oldtimers have a standardized way of coping with these ordinary steam-pipe noises.

T. G. O., Mahwah, N. J.

A. In cases of the ordinary steam-pipe sounds, which you describe, the routine procedure followed by many servicemen simply includes explaining to the complaining homeowners that the steam-pipe sounds are routine and minor. They are caused by expansion of steam pipes which were cold, and which become hot after the boiler sends steam through them. Increasing the temperature of the steam pipes causes them to expand or lengthen appreciably. Moving a bit, the pipes make sounds. Becoming hot, cast-iron radiators may also make sounds resembling hammer taps.

In many cases, you have to tell the homeowners that all these sounds can be ended only at considerable expense, which most owners find excessive for the slight benefits gained.

Q. Burner instruction books and textbooks often recommend 1½" and even 2" suction lines for large gun burners, firing say 20 to 30 gph, using No. 5 oil. Your articles say oilburner pump vacuums up to 10" or 15" are all right on such jobs.

I service such a job which has only a ¾"suction line, buried outside, 130 ft. long. As that is undersize, why is the vacuum at the pump only 6" to 9" using No. 5 oil?

L. M. A., Bronx, N. Y.

A. The owner may be ordering No. 5 oil, but it's a dollars-to-doughnuts bet that No. 4 oil is being delivered to the job. The 1½" and 2" suction lines you describe are installed where No. 5 oil will be used, and where there may be deliveries of No. 5 oil which is as thick and viscous as it is legitimate for this grade of oil to be. The installation you describe, having the ¾" buried suction line 130 ft. long, cannot operate successfully using highly viscous No. 5 oil.

Q. What are sensible readings of smoke and CO_2 for a new package unit using residual fueloil?

L. V., Richmond, Va.

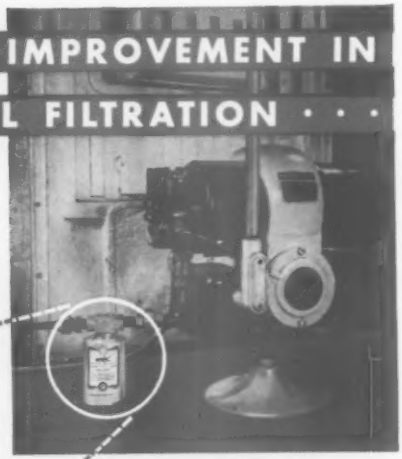
A. Certain engineers say the CO_2 should be 11% minimum, and the smoke should be No. 4 maximum on the Shell-Bacharach scale.

(Please turn to page 130)

THE GREAT NEW IMPROVEMENT IN OIL BURNER FUEL FILTRATION . . .

wix®

SPIN-ON TYPE OIL BURNER FILTER



OIL BURNER FUEL FILTER OBF-100

This revolutionary, *new* WIX Oil Filter easily replaces *all* comparable standard fuel oil filters . . . makes cartridge servicing simpler and more profitable. Just a "twist-of-the-wrist" does it—no tools, no filter pot to clean out! It's the self-contained unit that brings new efficiency and new economy to every oil burner operation.

Install this WIX Fuel Filter on all the burners you service or install—speed up your maintenance, increase your profit margin. Merely insert the die-cast aluminum head in any ⅜" N.P.T., one or two pipe (high or low pressure) oil burner system and . . . SPIN-ON the WIX Filter Cartridge! That's all there is to it. From then on, servicing requires only changing the Cartridge—no mess, no trouble, no time wasted—spin-off and discard the old—SPIN-ON the new!

Head and Filter are constructed of lightweight, rust and corrosion-proof aluminum with the Head featuring an *exclusive* air bleed and a safety locking screw. WRITE, today, for details on how this great, new WIX "SPIN-ON" Fuel Filter can work and make money for you!

- Exclusive POROSITE pleated paper filtrant
- Over 228 square inches of filtering surface
- Removes even microscopic contaminating particles
- Guaranteed to exceed 120 gph gravity flow
- COMPACT! 5-9/16" high, 2-3/4" wide, 8 ounces
- Listed as Standard by Underwriters Laboratories, Inc.

REPLACEMENT CARTRIDGE OBC-100

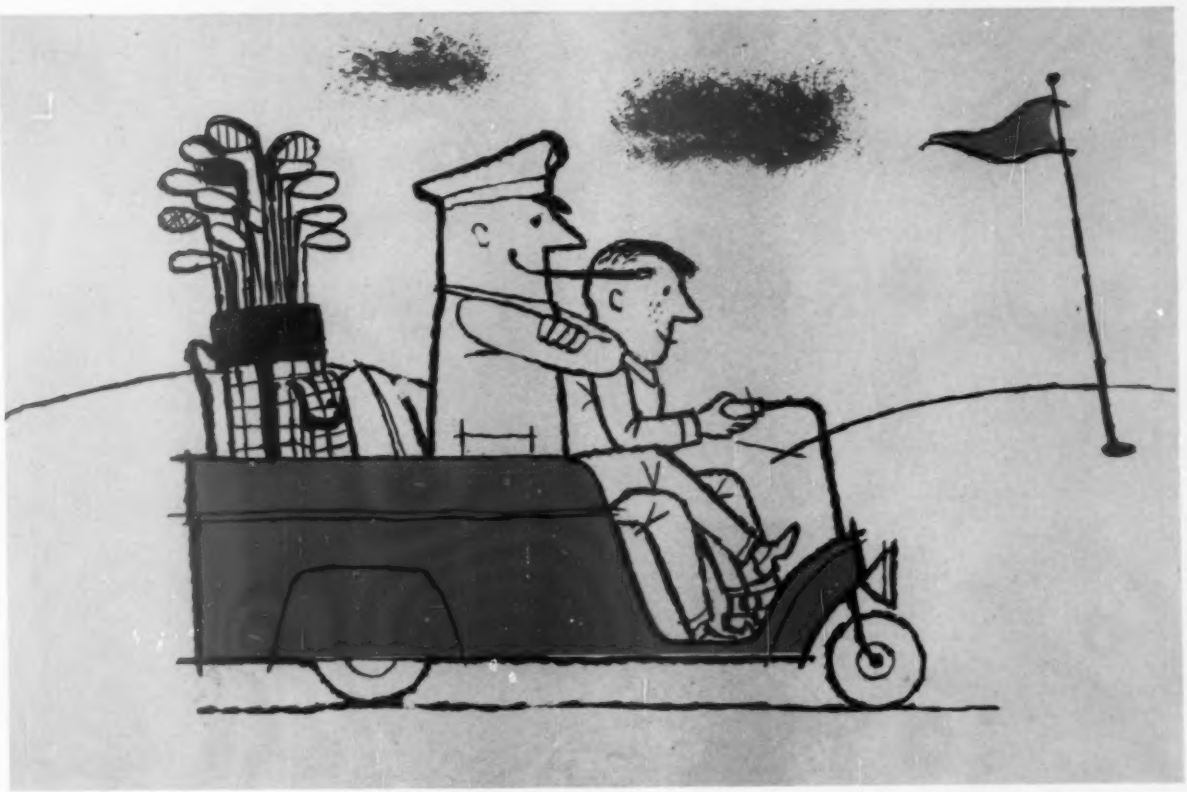
wix®

OIL BURNER FILTERS

WIX CORPORATION • GASTONIA • N. C.

In Canada: Wix Corporation Ltd., Toronto

BUSINESS IS BETTER



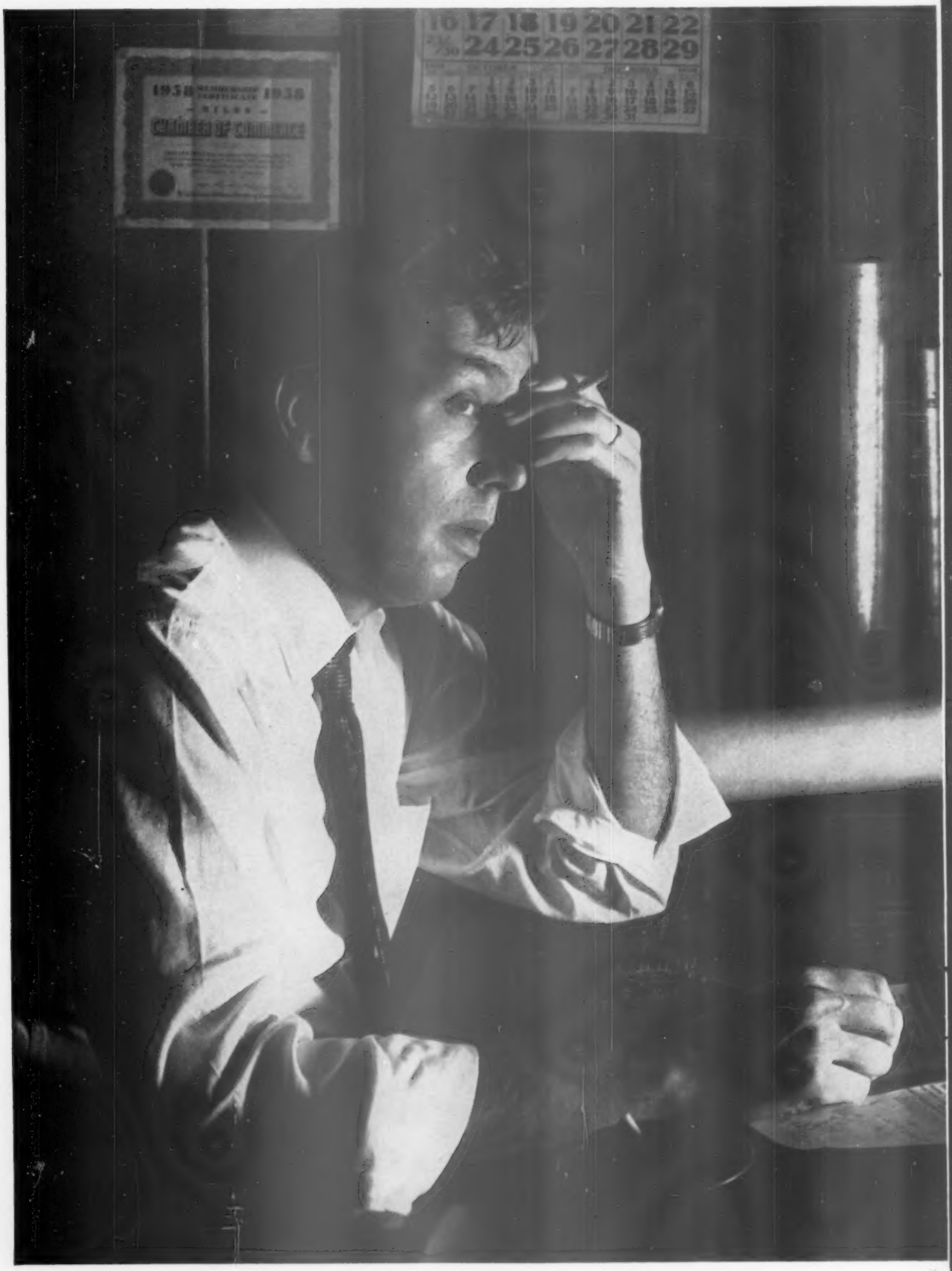
WHEN YOU DO BUSINESS WITH COASTAL

"Does the Most for Fuel Oil Dealers"

COASTAL OIL COMPANY

EXECUTIVE OFFICES: 744 Broad Street, Newark 2, N. J.

OIL COASTAL COMPANY


16 17 18 19 20 21 22
23 24 25 26 27 28 29

What happens when the "honeymoon" is over?

Promises come a lot easier than fulfillment!

Heating and air conditioning dealers soon find that the paid vacations and other special inducements offered by different manufacturers fade into memory along with the rose-hued words of courtship. Suddenly you're faced with the stark reality of making money with the line you're handling. What then?

That's when the "ordinary" things become all-important . . . the backing you get from the factory, the sales helps, the training schools for your men, freedom from shipping errors, the many ways a manufacturer can help you sell more efficiently and make more money.

With Lennox there are no gimmicks, no verbal smoke screens or razzle-dazzle —just an honest effort to help our dealers make money the year 'round—every year.

If *you* want help instead of promises, it will pay you to investigate Lennox now. It's the line designed for the long pull.

LENNOX Industries Inc.

Established 1895

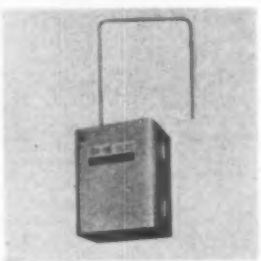
Marshalltown, Iowa • Columbus, Ohio • Syracuse, N.Y. • Fort Worth, Texas
Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des Moines, Iowa
Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

DOVER MODEL SERIES
Koven
GAS and OIL FIRED
PACKAGED
BOILERS
FOR HOT WATER HEAT
Oil-fired model illustrated
a little boiler that does a big job
"Ideal for multi zone control heat"
... easy to buy!
... easy to install!
... easy to service!
NATIONALLY ADVERTISED
Serving the Plumbing Trade Since 1881
L.O. KOVEN & BRO., INC.
RICHBOYNTON ROAD, DOVER, NEW JERSEY

NEW PRODUCTS

Heat-Trol is outdoor Thermostat to control and program Heating

HEAT-TROL OUTDOOR THERMOSTAT controls the temperature and programs heat in commercial buildings. Using a precise and thermal sensitive unit, the device proportions the supply of heat to compensate for the decrease or increase in outside temperature. It provides flexibility in its ability to program weekend and holiday shutdown, with automatic protection for setting day, night and weekend shutdown temperature.

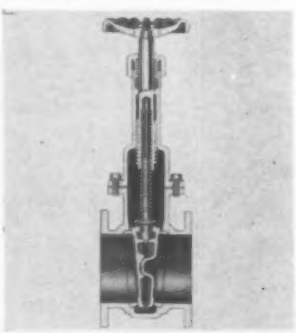


The control does not use electronic components. It may be connected directly to loads up to 1/3 hp or 10 amps., without additional switching relays or motor starters.

Made by: Heat-Trol Corp., 60 South Undercliff Ter., West Orange, N. J.

OPW announces new 4" gate Valve made of weight-reducing Aluminum

OPW HAS ANNOUNCED a new 4" gate valve for use on tank trucks. The valve, OPW 676-FR-4", has an aluminum body and bonnet, with aluminum selected because of its light weight to permit a greater payload.



The new valve has standard round tank truck flanges, forged bronze disc, molded packing, full acme stem threads. Details, along with description of other OPW gate valves for tank trucks, appear in Bulletin NP-676-E.

Made by: OPW Corp., 2735 Colerain Ave., Cincinnati 25, Ohio.

6000 customers know they can rely on Valley Oil's fast radio-dispatching . . . whether for oil delivery or burner service.

Constant radio contact gives headquarters maximum utilization of its service fleet . . . saves many miles of "backtracking."

"WE AVERAGE AN EXTRA CALL PER MAN, PER DAY USING MOTOROLA 2-WAY RADIO!"

"Economies and profits from 14 extra calls per day actually pay the cost of our Motorola 2-way radio system!" — reports William F. Briggs, Jr., Service Manager, Valley Oil Co., Portland, Conn.

But Valley Oil's savings go even deeper . . . In addition to eliminating needless back-tracking, Motorola 2-way radio gets the service fleet on the road *earlier*. Servicemen no longer drive to the yard each morning for briefing. A quick call on the 2-way radio steers each one to his first assignment. When the job is done, he receives orders for the next call, via radio. It is quick and easy — and no need to use the customer's phone. How about you . . . do these facts suggest ways Motorola 2-way radio can boost your operation's efficiency? Write today for free fact-filled folder.

MOTOROLA 2-WAY RADIO

Motorola Communications & Electronics, Inc. • A Subsidiary of Motorola Inc. • 4501 Augusta Blvd., Chicago 51, Ill.

Talking about firebox installation?

Explain that B&W IFB

also means better combustion

In Fire Boxes

Whether you're quoting on new fireboxes or converting old ones, you can sell prospects faster by pointing out the advantages of B&W Insulating Firebrick.

B&W IFB heat up faster than ordinary firebrick, then confine the heat to the firebox. This results in higher firebox temperatures, more complete combustion. It's only logical that with better combustion, soot and odors will be materially reduced. B&W IFB also have excellent acoustic properties, assuring quieter operation.

Clinch the sale by explaining that lightweight B&W Insulating Firebrick save 20% in fuel bills. That means approximately 1 year's fuel free for every 5 years of operation.

R-625

A Valuable Guide for Every Installer

Send today for this Handbook!

THE BABCOCK & WILCOX CO.

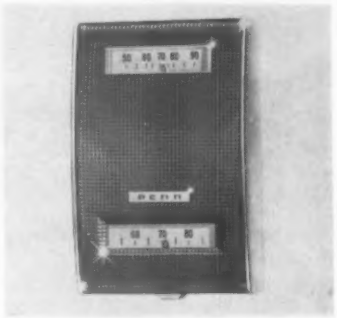
Refractories Division

Works: Augusta, Ga.

General Offices: 161 East 42nd St., New York 17, N. Y.

Penn introduces the "Thin-Line", low voltage heating Thermostat

"THIN-LINE" Type 820, low voltage heating thermostat introduced by Penn Controls, is finished in neutral beige tones and has a slim contemporary design to harmonize with any interior decor.



Features include separate thermometer and setting scales for maximum clarity, easy installation with no mounting plate necessary, no leveling required and easy field calibration.

Made by: Penn Controls, Inc., Goshen, Ind.

Hitemp offers "Wrap-It" Teflon Tape for dry Sealing threaded pipe Joints

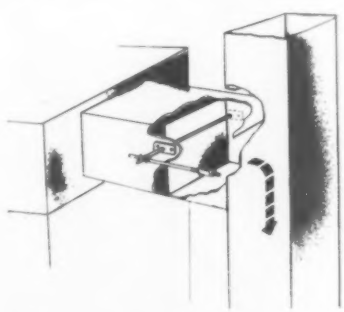
"WRAP-IT" TEFLON TAPE is available from Hitemp for dry sealing all types of threaded pipe joints. Supplied in ½" widths and in ten colors, individually packaged containers come in 25, 50 and 75 yard sizes.

The tape seals when it is wrapped around the threads; it can be used on a variety of materials, including steel, iron, brass, aluminum and monel. Assembly and disassembly is facilitated because of the tape's self-lubricating properties.

Made by: Hitemp Wires, Inc., 1200 Shames Drive, Westbury, N. Y.

Econo air pressure control Damper regulates air Volume and Velocity

DESIGNED to automatically control and compensate for excess air volume and velocity, Econo's Zone-A-Trol air pressure damper dumps or returns excess air volume back into the cold air return.



It installs on a connecting duct between the plenum and cold air return and consists of an adjustable counterweighted damper adjusted to a closed position when all supply ducts are open. When the heating system operates and one or more zone supply ducts are closed off by the zoning damper, any excess air pressure opens the dumper damper, recirculating the excess air back through the blower and furnace.

Made by: Econo Products Co., East Haddam, Conn.

stainless steel

- for longer life
- easier installation
- greater sales appeal

Vaporite

AUTOMATIC HUMIDIFIER

PRECISION BUILT TO AVOID COSTLY "CALLBACKS"

NEW **COMPLETELY STAINLESS**

MODEL 999

For any straight side warm air furnace

- Water leveling type
- New diaphragm design
- Only 4 lbs completely assembled . . less than 3¼-lb. strain on bonnet metal or plenum wall

2 GREAT TIME-PROVED THERMOSTATIC CONTROL MODELS

STAINLESS STEEL PAN . . .

heats more quickly . . . vaporizes water faster . . . resists chemical action of hard water . . . lasts far longer

SERIES 555C

For any straight side warm air furnace

SERIES 577

For slanting or straight side warm air furnace

AUTOMATIC DRIP-FEED VAPORIZATION

Thermostatically controlled valve admits water to vapor pan in carefully measured amount for balanced humidity

PROVED BY 20 YEARS OF USE IN THE MIDWEST . . . heart of the warm air industry

WRITE FOR FREE LITERATURE

AUTOMATIC HUMIDIFIER CO.

CEDAR FALLS, IOWA

Manufacturers since 1925 of a Complete Line of Automatic Humidifiers for Warm Air Furnaces

AIR-EASE

A USEFUL SALES TOOL

To use in selling **AIR-EASE** Heating and Air Conditioning Units.

This File Folder includes Brochures in color, with dimensions and specifications of all models of gas and oil fired heating units, including the NEW BTS-200 (200,000 BTU input) gas fired and BTL-200 (224,000 BTU input) oil fired units.

Heating from 60,000 to 200,000 BTU. Cooling from 2 to 5 tons.

WRITE for this new sales tool and the name of your nearest distributor.

6-O

AIR-EASE

THE JOHNSON FURNACE COMPANY

2129 WEST 117th STREET, CLEVELAND 11, OHIO

the warmest way
to the heart of a community

with
ROUND OAK FURNACES

ROUND OAK Circulaire Furnaces Are Designed For Greater Comfort, Engineered For Bigger Profits!

You benefit two important ways by selling Round Oak Circulaire Furnaces. Round Oak Units are especially designed to provide the all-round comfort customers want. And satisfied customers mean more repeat business for you. The efficient components plus the extra heavy duty heat exchanger enables the Round Oak Furnace to capture and deliver more heat longer. In fact, this wrap around Versat-all heat exchanger is so durable it is guaranteed for life! This means total customer satisfaction. And, since Round Oak Furnaces are designed for quick, easy installation, you save on installation time which means more profits for you. Round Oak offers gas, oil and coal furnaces in all price ranges and sizes from 65,000 to 1,000,000 BTU and also offers the Clima Pump, the all new, all electric heat pump. Write today for all the facts. There's no obligation.

ROUND OAK COMPANY
DIVISION OF PEERLESS CORP.
DOWAGIAC, MICHIGAN
Manufacturers of quality Furnaces, Central Air Conditioning and Electric Clima-Pumps.

Signet adds Model T700 Thermostat to its Line of temperature Controls

SIGNET MODEL T700 room thermostat is distinguished by the stylized star design of its cover. It embodies a precision-made bimetal element, welded by a special process and rolled to precise dimensions.

Snap-acting contacts are made of an alloy of platinum and iridium, positioned within the thermostat so that dust and lint will not settle on the surfaces. Model T700 is usable with 24 volt or millivolt systems. Ease of installation is a feature, with components placed within the case to minimize chances of accidental damage during installation.

Made by: Signet Control, 3205 S.E. 13th Ave., Portland 2, Ore.

Stewart-Hall Chemical's Testmaster detects Water if present in Fueloil

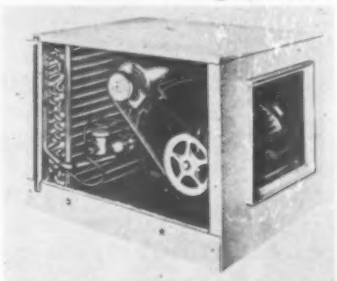
TESTMASTER, a paste added to Stewart-Hall's line, detects water if present in fueloil or gasoline. The paste, applied to the end of a dip stick lowered to the bottom of the tank, instantly changes to a red color up the exact level of the water line. If no water is in the tank, the paste retains its greenish color.

Testmaster is packaged in 3-oz. collapsible tubes; the tube protects the paste against spoilage.

Made by: Stewart-Hall Chemical Corp., 222 Washington St., Mt. Vernon, N. Y.

Crane split system Airconditioners adaptable to warm Air or Hydronics

CRANE air-cooled airconditioners are adaptable to a wide range of installations; for warm air heating systems, a cooling coil is installed in the furnace plenum or ductwork and for hydronic systems, an air handling unit with integral blower and motor is used.



The airconditioners require no floor space because the evaporator coil can be concealed in attic space or ductwork. The remote air-cooled condensing unit is located outside the building.

Made by: Crane Co., 155 North Wacker Drive, Chicago 6, Ill.

No matter what brand of heating oil you now handle...

MOBIL MEANS MORE CUSTOMERS!

because more people buy Mobilheat than any other brand!

. . . and because Mobilheat distributors are armed with special hard-selling marketing plans that meet specific needs, that work in their particular markets.

Right now, for instance, Mobilheat distributors are riding the crest of one of the most successful marketing programs in the heating oil business. It's Mobilheat's Automatic Personal Care plan—a good example of how Mobil gives its distributors what they need to bring in the business!

The *largest-selling product*, the *best-selling tools* and *management counsel* from Mobil will mean more customers for you as a Mobilheat distributor. If you are interested in handling the Mobil brand, contact the Mobil Oil Company office nearest you for more information.

America's Largest-Selling Heating Oil!

WHEN YOU TAKE ON THE MOBIL BRAND . . . YOU'RE ON YOUR WAY UP!

MOBIL OIL COMPANY, A Division of Socony Mobil Oil Company, Inc., 150 East 42nd Street, New York 17, N. Y.

FOR MAXIMUM HEATING
OR EXHAUSTING EFFICIENCY
AT LOWEST COST

Patents 2,722,372 and 2,855,874 and Patents Pending plus Exclusive Foreign Patents.

...Specify

Quickdraft

POWER-DRAFT UNITS
DESIGNED FOR RESIDENTIAL,
COMMERCIAL AND INDUSTRIAL
APPLICATIONS

★ No motors, fans or bearings in exhaust line ★ Needs no stacks ★ Acid-resisting vitreous enamel finishes ★ Extremely high static pressures now available

FOR HEATING PLANTS AND INCINERATORS . . . *Quickdraft* provides constant draft for efficient and economical combustion. It eliminates pulsating or chattering, puffing, smoking and sooting. Costly, tall, unsightly stacks are unnecessary.

FOR INDUSTRY . . . *Quickdraft* now offers extremely high static pressures for EXHAUSTING corrosive gases, abrasives and paint sprays . . . for CONVEYING all types of bulk materials or wastes that can be moved by air.

FOR MOVING AIR in or out of buildings through ducts . . . *Quickdraft* is outstanding in performance and efficiency.

9010-QD

IMPORTANT NOTICE

To withstand corrosive gases, all *Quickdraft* units are available in standard acid-resisting vitreous enamel, No. 316 Stainless Steel, rigid plastics (P. V. C.) and with plastic and Fiberglass coatings.

Write today for Quickdraft Engineering Data.

Quickdraft CORPORATION

P. O. Box 87-F
Canton, Ohio

Thrush fast-acting float air Vent for up to 50 Lbs. working Pressure

THRUSH #8 FLOAT AIR VENT is used at all high points of hot water heating or chilled water systems to eliminate air. It has a ⅛" IPS male inlet and is equipped with a special outlet connector for ¼ OD copper overflow.

Vent is suitable for up to 50 lbs. working pressure, is constructed of non-corrosive metals, a heavy brass shell, copper float, stainless steel needle seat and a special composition tight shut-off ring seal.

Made by: H. A. Thrush & Co., Peru, Ind.

Oilco augments oil handling Line; enlarges plant and office Space

COMPLETION of a modernization of its office and factory, including enlarged and improved space, has been announced by Oilco. At the same time additions have been made to its line of oil loading assemblies.

The new 460-M loader is a spring-balanced assembly with compression type springs, capable of a vertical travel arc of 130 degrees. The springs are adjustable; the arm may be lowered to loading position without holding down manual pressure.

Another Oilco development is the No. 1155 automatic loading line valve; it provides vacuum control, eliminates spillage, permits speed loading, instant draining, predetermined shut-off and multiple filling of compartments. Furnished with fusible link and provision for manual shut-off. Available in 3" and 4" sizes, aluminum and bronze construction; furnished with Nos. 1426, 1458 and 1462 loading assemblies.

Oilco also is about to go into production on a 6" boom type loading arm, designed to handle with the same ease as 4" equipment.

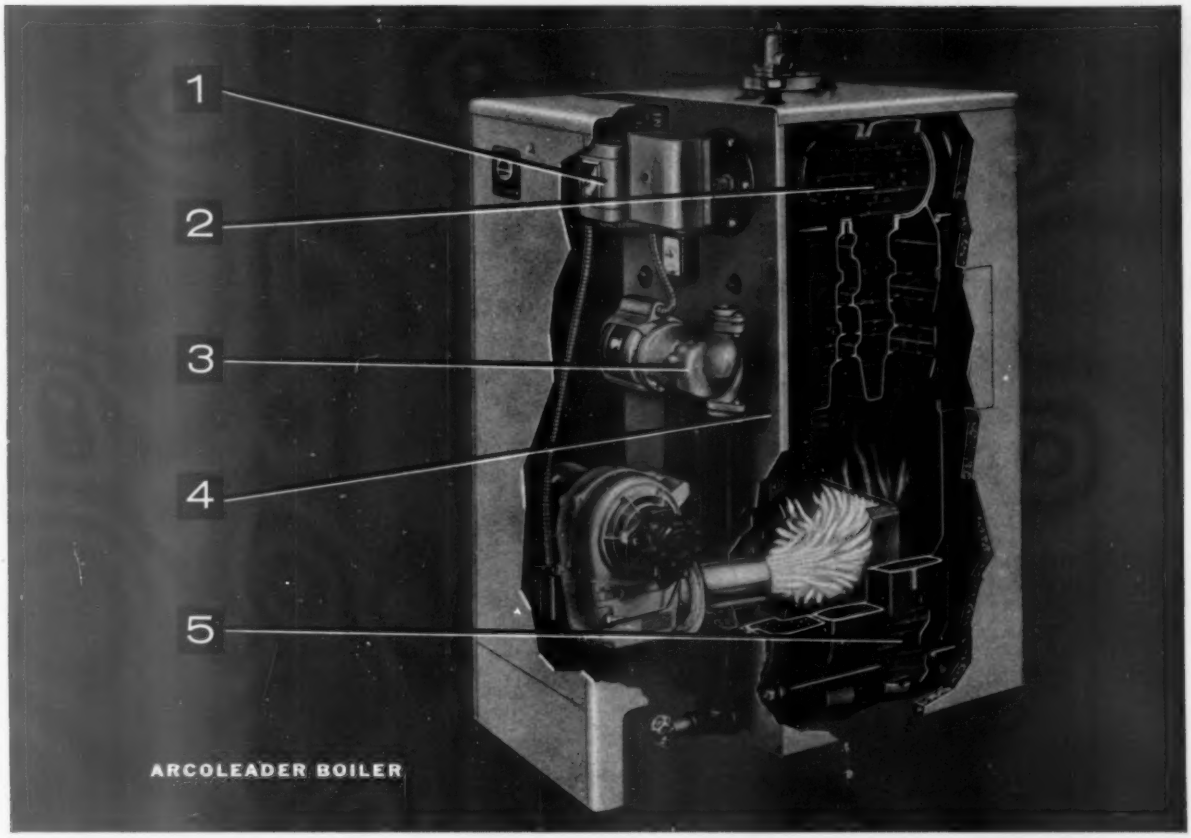
Made by: Oil Equipment Mfg. Co., 3100 Vermont Ave., Louisville 11, Ky.

Watts "4-in-1" Drainer services the water-logged expansion Tank

WATTS "4-in-1" combination tank drainer, Type 4000, acts as an expansion tank drain valve, system shut-off valve, air fill valve and hose drain-off connection.

Internal design is based on a "dual seat" principle; as the No. 4000 closes off the flow to the expansion tank, it simultaneously opens the valve drain. Closing off the drain automatically opens the expansion tank line. Body is all bronze.

Made by: Watts Regulator Co., Lawrence, Mass.



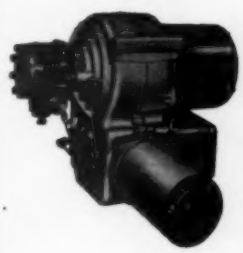
Here's why the packaged ARCOLEADER helps you

HANDLE MORE HEATING JOBS

Five timesaving features of the American-Standard packaged Arcoleader enable you to get a larger share of the profitable boiler replacement business.

You save labor time because the packaged Arcoleader arrives fully assembled with (1) all controls mounted and pre-wired for immediate connection; (2) a large-capacity, tankless water heater factory-installed (optional); (3) the circulator factory-mounted; (4) all controls, plus supply and return connections, mounted on the front; and (5) wet base construction for installation anywhere without specially built platform or flooring protection.

You make more money with American-Standard packaged boilers because fast installation allows you to finish jobs faster, thus handle more jobs during the peak replacement season.



The new DH Arcoflame oil burner is gaining popularity, especially for modernization, because: Its die-cast aluminum housing is light, yet sturdy —assures alignment of motor, fan and fuel unit. • New Exact-aire adjustment control sets air-oil mixture without tools. • Sling, pedestal or flange mountings make DH Arcoflame burner suitable for all jobs. • 4 disk-turbulator combinations cover full firing range, 0.65 to 3.00 gph.

For full details see your American-Standard distributor or write AMERICAN-STANDARD PLUMBING AND HEATING DIVISION, 40 West 40 St., New York 18, N.Y.

American-Standard and Standard® are trademarks of American Radiator & Standard Sanitary Corporation

AMERICAN-Standard PRODUCTS

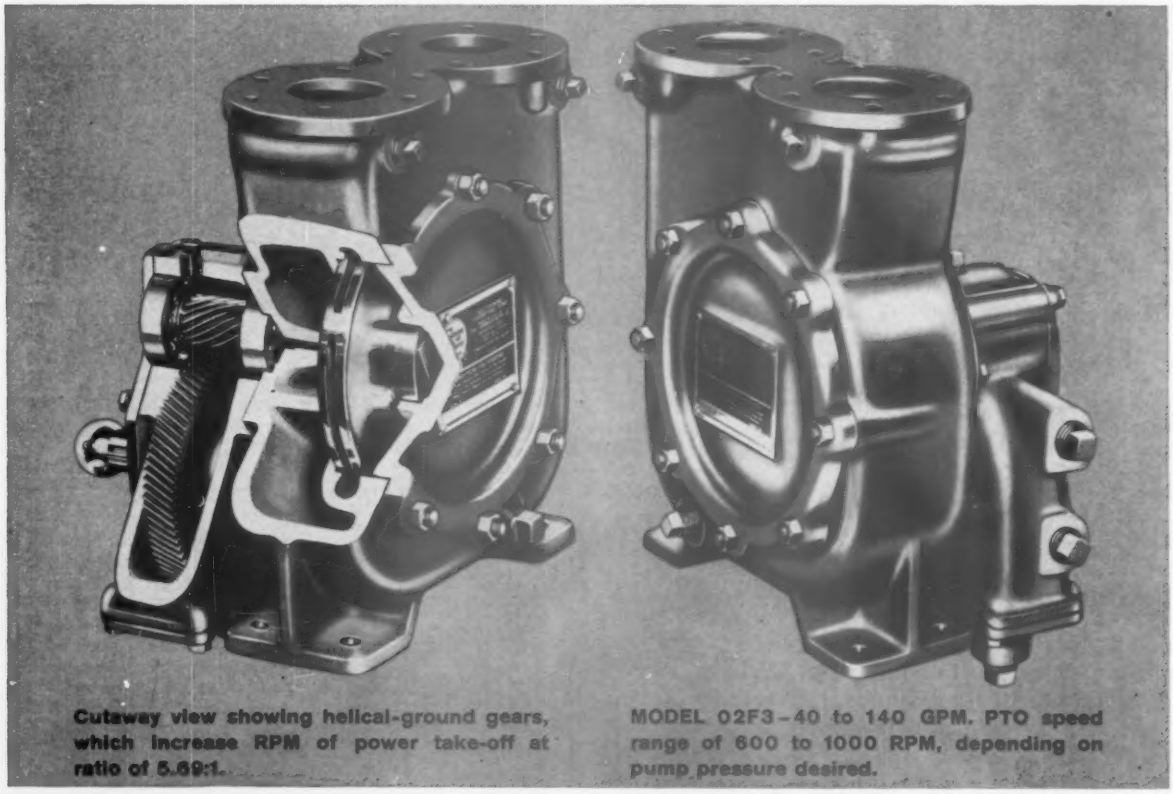
AMERICAN-Standard

PLUMBING AND HEATING DIVISION

BY GORMAN-RUPP... A SINGLE PUMP TO MEET ALL FUEL DELIVERY NEEDS

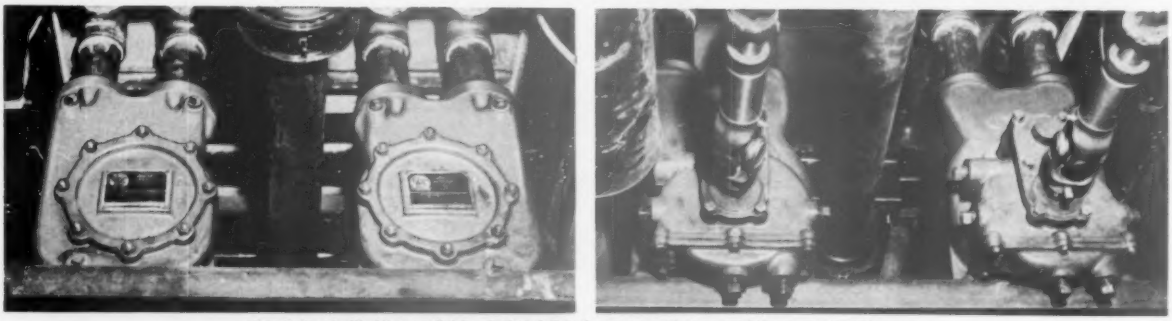
40 to 140 GPM, positive action, sure priming, trouble-free performance, no check valve—all in the new Gorman-Rupp 02F3 Pump. Here's the unit specifically designed for quick, efficient fuel oil deliveries. Time is money—so save time —see your Gorman-Rupp Dealer Today!

THE GORMAN-RUPP COMPANY
305 BOWMAN STREET • MANSFIELD, OHIO
Gorman-Rupp of Canada, Ltd., St. Thomas, Ontario



Cutaway view showing helical-ground gears, which increase RPM of power take-off at ratio of 5.69:1.

MODEL 02F3—40 to 140 GPM. PTO speed range of 600 to 1000 RPM, depending on pump pressure desired.



dual installation of Model 02F3 for gasoline and fuel oil delivery.

NEPTUNE PETROLEUM METERS

Complete Truck Metering System in One Weight and Space Saving Unit

Nothing extra to buy...only 3 connections to make

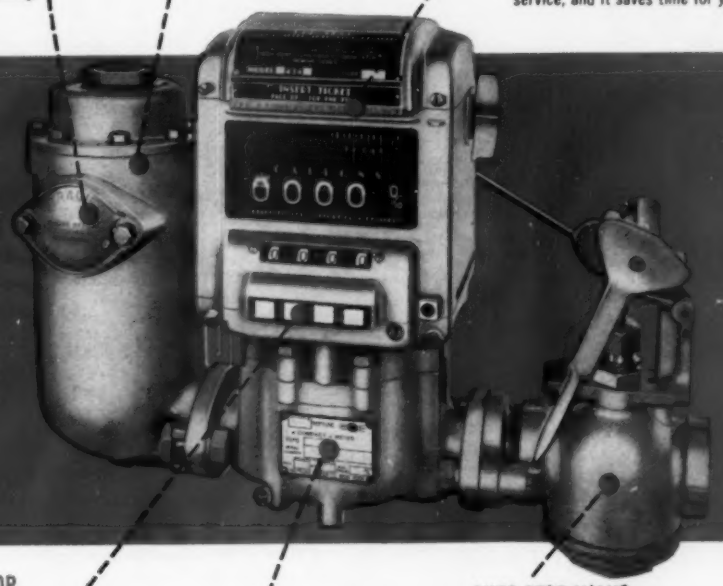
Only Nepture gives you *all* these features in so little space, with so little weight. Everything's built into one compact unit...a complete metering system. Most Neptunes can be assembled with right-hand, left-hand or angle flow, so they pack neatly into any position in the compartment.

Neptune meters permit more pay-load...with no "extras" or accessories to buy...less chance for leaks...less chance for improper installation.

Add Neptune's fine reputation for sustained accuracy and you have the big reasons why this Neptune meter is the oil marketer's most sought-after business friend.

All sizes. Ask your Neptune Equipment Jobber or Tank Truck Manufacturer for details.

Look what's built into your NEPTUNE...



STRAINER:
Removes sediment, scale and dirt from liquid, averting stoppages and preventing undue wear or damage to meter. Easy access for cleaning.

AIR RELEASE:
This patented Neptune design removes air that may be entrained or sucked into liquid before it enters the meter. High efficiency is absolutely necessary for accuracy.

PRINT-O-METER:
Automatically provides a meter-printed receipt showing number of gallons delivered. Customers appreciate this proof of honest service, and it saves time for you.

AUTO-STOP QUANTITY CONTROL:
Operator sets register for any desired quantity by pushing these buttons. Tripping device actuates Auto-Stop Valve automatically when pre-set gallonage is delivered.

MEASURING CHAMBER:
Positive displacement type. Only one moving element. Measures liquid by volume. Most widely preferred for sustained accuracy and long life.

AUTO-STOP VALVE:
Automatically shuts off flow when correct quantity has been delivered. Actuated by tripping mechanism in Auto-Stop register. Avoids spillage and overmeasure. Double-trip valves on larger meters shut off high flow smoothly, quietly, with high accuracy.

NEPTUNE METER COMPANY **neptune** 47-25 34th Street Long Island City 1, N. Y.

for a better measure of profit

BRANCHES AND JOBBERS IN ALL PRINCIPAL AMERICAN CITIES

How to do a 5-hour job in just 30 minutes!

9:00 *—Home heating serviceman sees chamber needs replacement.*

9:10 *—He measures and cuts stainless steel sleeve from roll supplied in kit.*

9:20 *—Cerafelt bottom and liner are easily cut to fit sleeve.*

Reline Heating Units 10 times faster with this new J-M **CERAFELT®** *Combustion Chamber Kit*

Now! Johns-Manville offers a revolutionary development that changes maintenance from a necessary loss . . . to a profitable part of your business! Cerafelt can cut 5-hour repair jobs to 30 minutes . . . and several of these 4½-lb. Cerafelt kits can be carried in your truck to eliminate costly return trips, permit immediate replacement of faulty chambers.

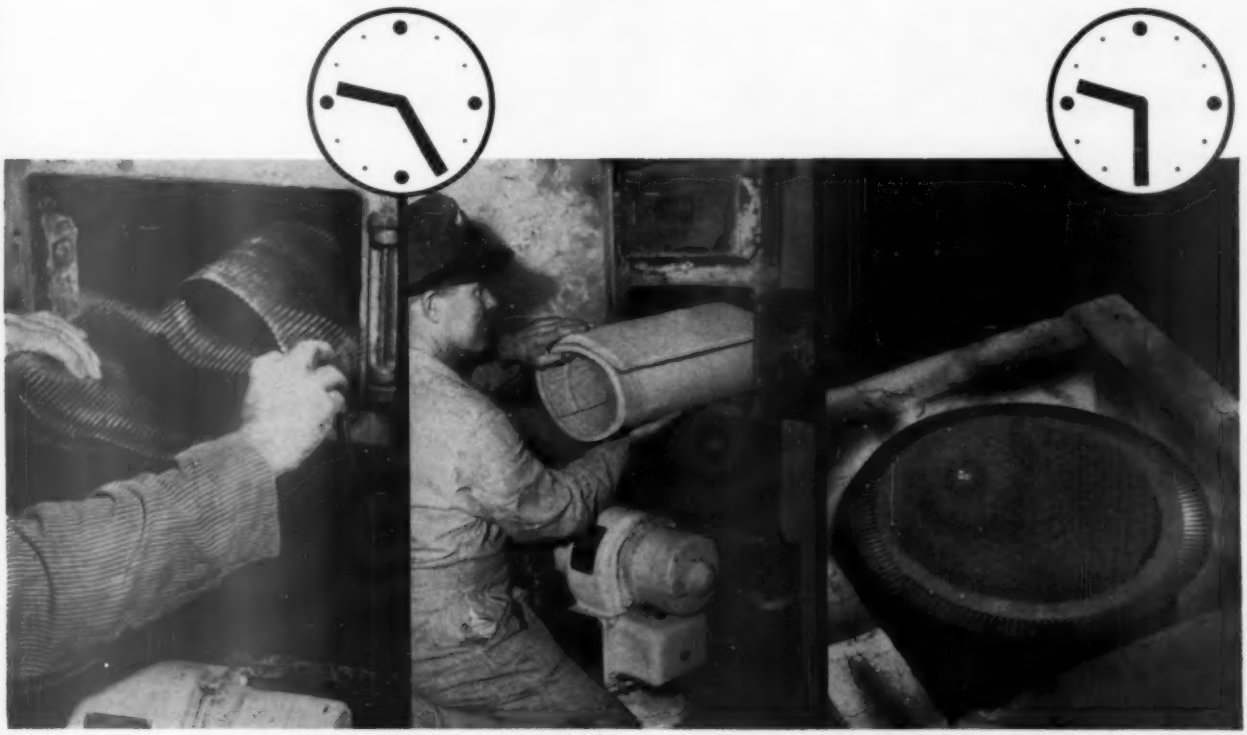
LOOK AT THESE CERAFELT FEATURES:

- *Quick Installation—simple tools suffice*
- *One Size Fits All—you can reduce your inventory*
- *Weighs Less—only 4½ lbs., and all in one handy kit*
- *No Mess—leave the old chamber right where it is*
- *Unbreakable—no damage during shipment or storage*
- *Makes costly return trips unnecessary*

Your customers will be delighted with the reduction of noise, soot, odor and smoke . . . *and* with fuel savings that can run as high as 20%! A Cerafelt chamber permits up to 25% reduction in chamber size. It heats to maximum refraction (with more complete combustion) in 10 seconds, with chamber temperature as much as 300F hotter!

The performance of a Cerafelt chamber can be the decisive factor in keeping customers who may be considering a change to another type of fuel.

It all adds up to maintenance profits for you . . . and greater satisfaction for your customers. To find out more about profitable Cerafelt Combustion Chambers, use the handy coupon—*today!*



9:25 *—Chamber is disassembled and put together inside furnace.*

9:30 *—Complete unit in place and Cerafelt sticker put on furnace wall.*

JOHNS-MANVILLE
BOX 14
NEW YORK 16, N. Y.

Gentlemen:

☐ Please send complete information about Cerafelt Combustion Chamber

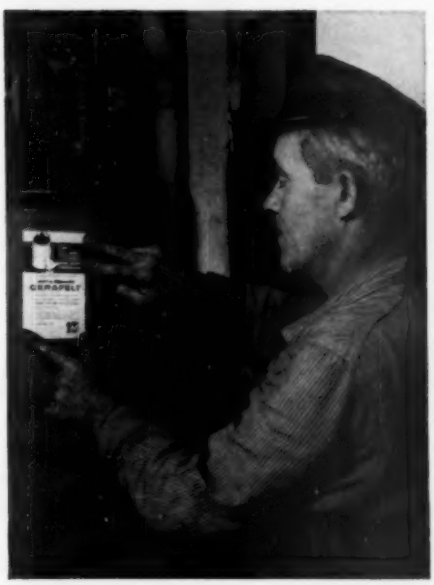
☐ Send name and address of nearest J-M Distributor

NAME_____

COMPANY_____

STREET_____ CITY_____

COUNTY_____ ZONE____ STATE_____



JOHNS-MANVILLE

JOHNS-MANVILLE JM PRODUCTS

AN INSULATION FOR EVERY COMMERCIAL AND INDUSTRIAL USE

NOW!

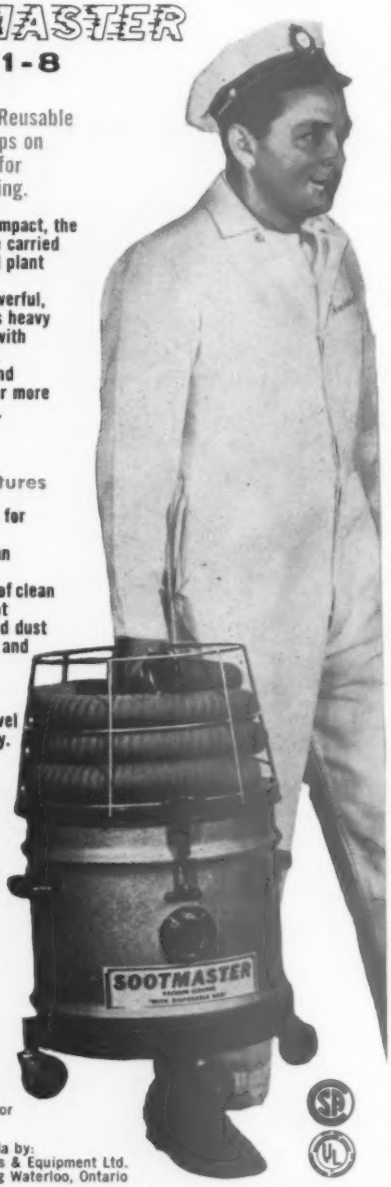
AN INDUSTRIAL CLEANER WITH

REAL PORTABILITY

THE SOOTMASTER 601-8

New Elastic Top Reusable Filter Bag — Snaps on or off filter unit for quick easy cleaning.

- Lightweight and compact, the 601-8 can easily be carried from job to job and plant to plant.
- Convenient and powerful, the 601-8 combines heavy duty performance with real handling ease.
- More economical and efficient than larger more expensive cleaners.



MORE Important Features

- Maximum filtration for lasting suction.
- Powerful turbine fan suction unit.
- Controlled exhaust of clean filtered air does not disturb accumulated dust on basement walls and rafters.
- Finger-touch maneuverability — dollie has four swivel casters for stability. (the 601-8 can be ordered as an economy model without casters)
- Complete line of cleaning attachments are on the shelves of leading distributors.

MACHINE COMES COMPLETE WITH

- 10′ duck covered hose.
- 27″ furnace cleaning tool.
- handy hose carrying cage.
- 10 reusable paper filter bags.

Jobber and Distributor Inquiries Invited.

Distributed in Canada by: Imperial Refractories & Equipment Ltd. Refractories Building Waterloo, Ontario

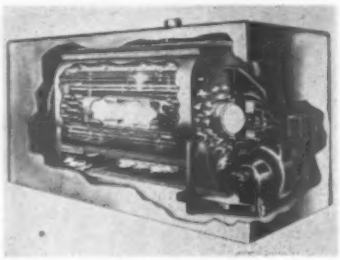
There is a Mastercraft Industrial Cleaner for every maintenance job. Write today for descriptive literature.

mastercraft INDUSTRIES INC.

109 Lanza Avenue · Garfield, New Jersey

New Model of Dynatherm oil boiler Unit designed for heating the smaller Homes

MODEL 24 DYNATHERM automatic oilfired boiler unit has a net load forced hot water rating of 580 sq. ft., net load steam is 350 sq. ft.; firing rate is 1 gph.



The model incorporates all of the time-tested features of the larger Dynatherms, including welded steel construction, exclusive Whirling Flame, built-in immunity to draft problems. The unit is shipped assembled with all fittings and controls in place and completely wired. Available as an optional extra is a 3 gpm tankless type water heating coil.

Made by: Dynatherm Div., Bethlehem Foundry & Machine Co., Bethlehem, Pa.

Dust-Stop Fiberglas air Filter marketed in Packages of Three

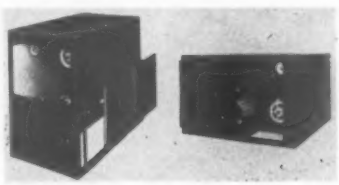
A DUST-STOP air filter "3-Pak" is three filters packaged in a polyvinyl bag, which has been designed to provide the homeowner spare filters for convenient replacement.

The package was developed after a study indicated that people would replace furnace filters the recommended three times each heating season if clean filters were readily available. Now "3-Paks" are available in 16″ x 20″ x 1″; 16″ x 25″ x 1″, 20″ x 20″ x 1″ and 20″ x 25″ x 1″ sizes.

Made by: Owens-Corning Fiberglas Corp., Toledo, Ohio.

Luxaire air handling blower-coil Units provide Flexibility in three Capacities

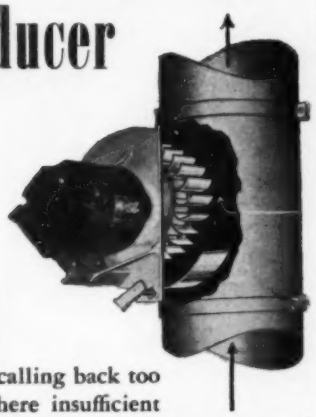
LUXAIRE SERIES "BC" blower and cooling coil units are available in 34,800, 45,000 and 56,000 Btu/hr net cooling capacities for use with 3, 4 and 5 hp air-cooled condensing units.



The units provide flexibility with either horizontal or vertical discharge and end, bottom or side air intake. Vertical discharge is made possible by changing the position of the drain pan. In the vertical position, the unit can be placed alongside a forced air furnace and connected to the same ductwork, with filter frame located for bottom or side air intake. Four mounting legs make bottom air intake possible. For usual horizontal installations, Luxaire blower-coil units connect with ducts to air diffusers for multiple room conditioning.

Made by: The C. A. Olsen Mfg. Co., Elyria, Ohio

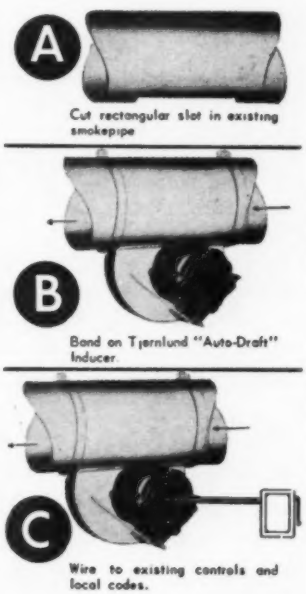
TJERNLUND "Auto-Draft" Inducer



Solves Your Problem Draft Jobs!

CHANCES ARE, you're calling back too often on certain jobs where insufficient and unstable draft is causing smoke, noisy starts, and basement sooting. You'll completely eliminate these unnecessary service calls, and make additional profits, when you *Guarantee Draft with "Auto-Draft".*

Simple as A-B-C to Install!



Only TJERNLUND has all these Features:

- Heavy Duty construction.
- Nationally known motor.
- Light weight.
- Quiet Operation.
- Built for years of service.
- Venturi-type operation.
- Doesn't rob furnace room of combustion air.
- Uses minimum smoke pipe length for mounting.

At your Jobber, or Write:

TJERNLUND MFG. CO.
2140 Kasota Ave., St. Paul 8, Minn.

Most WANTED! *for top* QUALITY PERFORMANCE

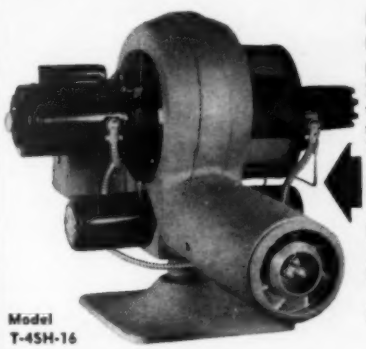
KORTH

IMPROVED SHELL HEAD BURNERS

FOR TOP QUALITY AND TOP PERFORMANCE sell and install KORTH Shell Head oil burners. Product quality—famous with KORTH—insures higher profits, results in more customer satisfaction through higher combustion efficiences, lower operating costs, and service-free operation. Models and sizes from .75 through 20.0 gph provide a complete line of burners for all requirements.

ADJUSTABLE, UNIVERSAL FLANGE MOUNTED burners with or without improved Shell Head are available for all furnace and boiler units . . . ideal for replacement jobs or with new units. New style flange design permits easy adaptation to front plate studding and exact setting for proper tube length. The extra heavy gauge tube and cast iron flange insures firm, positive mounting.

Model SR-SH-1



Model T-4SH-16

BIG BURNERS for BIG JOBS . . . .

Models and sizes up to 200 gph equipped with M-H electronic safety controls (Group 7 & 8) factory mounted and wired.

Model T-3SH-10 4.00- 7.0 gph
Model T-3-10 4.50-10.0 gph
Model T-4SH-16 8.00-20.0 gph
Model T-4-16 10.00-20.0 gph

KORTH OIL FIRED HOT WATER HEATERS

Glass lined and Copper storage tanks.
Five sizes: 30, 45, 50, 65, and 70 gallons.
Recovery rates from 120 to 180 gph.
Five year Guarantee and five year warranty on glass lined tanks.

7½ year guarantee and 7½ year warranty on copper tanks.

A complete line of quality heaters priced competitively for high volume sales.

Investigate the advantages of Korth now . . . write for "Complete Information" today!

ECKHART MFG. CO. INC.
UNION, NEW JERSEY

WE NEED

Exclusive area distributors, of highest repute for stability, ethical operation and merchandising experience.

A few more regional commission sales representatives to market the amazing new hydronic heating package that provides the comfort of radiant heat at a price competitive with forced air.

THE NEW BOILER "DESIGNED" FOR OIL FIRING

CAMERON HYDRONIC
JET-O-MATIC RADIANT HEAT

1. A unique but proven line of oil and gas home heating "boilers", revolutionary in concept, incomparably compact, of guaranteed quality and competitively priced.

2. A truly radiant, low priced form of hydronic base panel called "CAMBOARD", it is almost invisible in a home, yet generates unrivaled hydronic-radiant heating comfort.

3. A complete hydronic package (including the first efficient air trap-flow control valve on the market.)

OUR COMPANY

- HAS BEEN IN BUSINESS FOR 103 YEARS.
- HAS ABOUT $4,000,000 IN PROFITABLE ANNUAL SALES.
- HAS OVER 400 EMPLOYEES.

Write or Telephone:
Mr. Patrick Hart, Vice President
SOUTHERN STEEL & STOVE COMPANY, INC.
6th and Dinwiddie Streets • Richmond 24, Virginia
BElmont 3-6981

White-Rodgers' D'Luxline Thermostat for Heating, Cooling or Combination

D'LUXLINE thermostat, introduced by White-Rodgers, is offered in heating, cooling and heating-cooling types. It features sealed mercury contacts. Both heating and cooling types are anticipated with differentials as narrow as one-half degree for heating and one degree for cooling. A level-bubble is built into wall-mounting plate.

Thermostat setting is knob-type, with large dial; the thermometer can be recalibrated with a screwdriver.

Made by: White-Rodgers Co., 1209 Cass Ave., St. Louis 6, Mo.

American-Standard designs Baseboard for Use in height-restricted Areas

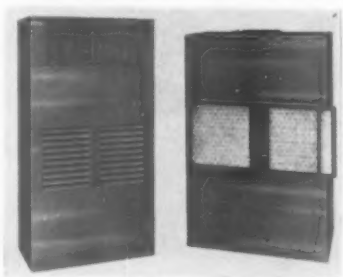
MODEL 8 RADIANTRIM baseboard panel is designed for installation in height-restricted areas and to match the appearance of the larger Model 10.

Constructed of cast-iron and water-backed, both 10 and 8-inch baseboards have a full line of matching accessories. Model 8 Radiantrim panels can be installed against a wall or recessed to the depth of the plaster; available in 12 and 24" sizes.

Made by: American-Standard, Plumbing & Heating Div., 40 West 40th St, New York 18, N. Y.

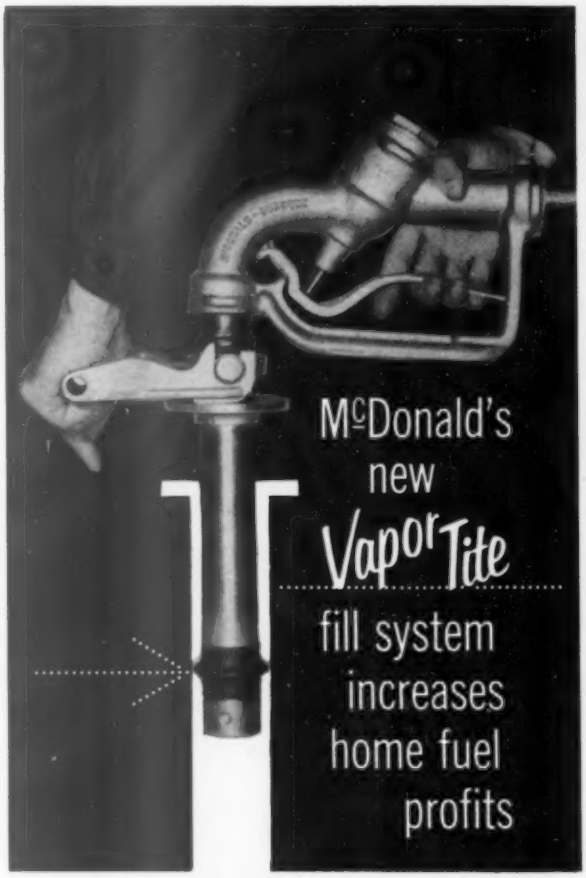
Moncrief 5-ton water-cooled Unit usable alone or in year-round System

MONCRIEF No. H-512-W, 5-ton water-cooled airconditioner can be used as an add-on unit with a forced air furnace or separately for cooling only. Net cooling capacity is 64,000 Btu/hr.



It is shipped from the factory completely assembled with a top outlet and slide-out filter frame for connection to ducts; an accessory discharge plenum with grille and louvered intake grille can be added. Cooling circuit comprises a hermetically-sealed, heavy-duty compressor, cooling and condenser coils.

Made by: The Henry Furnace Co., Medina, Ohio.



cuts delivery time and eliminates overflow and dripping

■ With a McDonald Vapor-Tite fill system on your trucks, home fuel oil deliveries are made quickly and easily . . . you can cut home fuel delivery time by seven to ten minutes per call. The Vapor-Tite system eliminates overflow and dripping, too. These features can substantially increase your profits through savings in time and wasted product.

■ McDonald's new Vapor-Tite fill system combines a Vapor-Tite fill tube with a McDonald Fuel Oil Nozzle. One unit goes on each truck. No adaptors are needed. This also eliminates costly material and labor expense involved in placing adaptors on the customer's fill pipes.

Here's how it works

□ When fill is to be made, simply drop the tube into the fill pipe and press down on the handle. The composition sealing sleeve expands and forms a vapor-tight connection with the inside of the pipe.

□ No chance for vapor to escape and cause a hazard. McDonald's Fuel Oil Nozzle combines rugged design with light weight. Offers effortless operation, chatter-free opening and closing. Contains McDonald exclusive shock eliminator — a special shock mechanism that preserves the nozzle, protects the line, pump and all other connection parts from damage due to sudden shock.

□ McDonald Vapor-Tite Fill Fuel oil systems are equipped with either aluminum or bronze nozzles. 1¼" in bronze (820), 1¼" and 1½" in aluminum (821). Special reducer is available for fill pipes, less than 2" size.

For complete information on McDonald's new Vapor-Tite Fill system write today.

A. Y. McDONALD MFG. CO.
Dept. FOH-960, 12th & Pine, Dubuque, Iowa

Here's why *Sentry*

AT-A-GLANCE
TANK GAUGES

are tops in sales and performance

1 ACCURATE, DIRECT READING — Red indicator and large, non-fogging calibrated scale provides clear, visible reading from any angle.

2 HEAVY DUTY CONSTRUCTION — Non-leakable double wall dome secured to die-cast, non-corrosive zinc base assembly. Withstands 70 lb. air pressure per sq. inch. Fully guaranteed.

3 FOOL-PROOF MECHANISM — Simplified lever-type action. No magnets, gears, cams or springs to wear out. Non-corrosive thruout.

4 PROTECTED CORK FLOAT — Triple coated with phenolic base Bakelite. Absorption-proof. Resists oils, alcohol and other chemicals.

EASY TO INSTALL — Install quickly and easily, even in partially filled tanks.

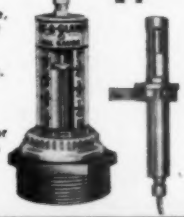
5 FITS ALL TANKS — Factory adjusted to fit all tanks up to 12' deep with standard openings of 2" (Model D-2) or 1½" (Model D-1½).

Fastest selling in the industry, Sentry AT-A-GLANCE gauges are recognized for their superior qualities of accurate measuring, clear visible reading, rugged but simplified construction and long-life durability. They are fully guaranteed and "listed as standard" by Underwriter's Laboratories. Complete Literature, Sales Brochures and Counter Displays available.

SENTRY Superior Quality THERMA-GAUGE

Similar to the standard AT-A-GLANCE gauge above, but features a solid red thermometer type indicator and a two-piece die cast plug-nut assembly which permits simplified tank installation.

STOVE AND SPACE HEATER GAUGES
Several models with accurate, easy-to-read indicators to fit all tanks. Also models for small tanks such as power mowers and outboard motors.



REMOTE READING TANK GAUGES
Several models for outdoor reading of levels in tanks indoors, underground or at delivery fill pipe.

KRUEGER *Sentry* GAUGES
GREEN BAY • WISCONSIN

Vacuum and Oil Pumps

(*Begins on page 71*)

That's the maximum, negative pressure, in effect, which an oilburner pump can develop for drawing oil from a tank located below the burner.

The 14.7 pounds pressure is feeble, indeed, compared to usual 100 lbs. pressure developed on the output side of fuel-unit oil pumps, and to the 300 lbs. nozzle pressure developed as everyday practice by the Gerotor pumps used in certain commercial and industrial oilfiring equipment.

As accompanying Diag. 2 and its caption explain, sea-level atmospheric pressure is only great enough to raise a column of mercury a height of 30".

That fact was not discovered lately. It was discovered and taught in the early 1600's by Italian physicist Evangelista Torricelli (1608-47), who is well known today because he was the discoverer of the principle of the mercurial barometer. Named after him are the Torricellian vacuum (Diag. 2) and the Torricellian tube, which is a glass tube hermetically sealed at one end.

Torricelli made up a glass tube, sealed at one end and somewhat longer than 30". He filled it brimful with mercury while it was in the vertical position with its open end up, of course. He put his thumb over the open end to seal it, turned it so that its open end was down, and submerged the open end in a pan of mercury. With the open end thus under the mercury in the pan, he took his thumb from the opening. He proved that atmospheric pressure at sea level is only enough to raise mercury to a height of 30", as Diag. 2 shows.

Why only as high as 30?

That's why the vacuum gage you use today in servicing oilburners has numbers that go up to only 30.

Mercury is a heavy liquid. It weighs 13.57 times as much as water weighs. Mercury weighs 16.5 times as much as No. 2 oil of 0.822 specific gravity. Therefore a perfect vacuum or a Torricellian vacuum lifts water 13.57 times the height it can lift mercury (33.94 ft.) . . . and lifts the No. 2 fueloil 16.5 times as high as it can lift mercury (about 41 ft.). That's at sea level.

Under conditions of exceptionally low atmospheric pressure, or on a high mountain where the atmospheric pressure is low, the apparatus in Diag. 2 (left side) reports less than 30" of atmospheric pressure. That's why at a high altitude an oilburner pump has less oil-lifting ability than it has at sea level . . . even though some oilburner servicemen, including Sparky, are not content to go along with this principle of nature.

Everything in this article has been on problems of pumping No. 2 oil. The subject can't be closed without a warning that seemingly can't be given often enough. That is: For an outside tank job, always equip a pressure burner with a return line. Where you install a pressure burner that's connected to an outside tank, do not fail to install a return line. Make the return line the same size as the suction line.

MAKE MORE,

get your name on the Door

You have four special advantages working for you when you take on a Sinclair Oil Heat franchise . . .

$ **Sinclair Heating Oil** is one of America's best-selling heating oils. Premium Quality at regular price, it contains an exclusive anti-rust ingredient. That means fewer service calls.

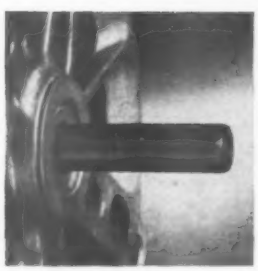
$ **An unusual sales training program** that helps bring you new customers.

$ **Ample storage facilities** assure you of quick, dependable service.

Team up with Sinclair Oil Heat for more profits. For details, write: Sinclair Refining Company, 600 Fifth Avenue, New York 20, New York.

Sinclair HEATING OIL

Sinclair HEATING OIL SuperFlame

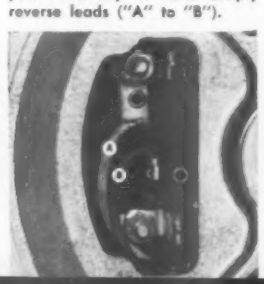


SHAFT PROTECTION—new gun-metal-like treatment of shaft resists rust so the blower is always easy to remove.

FAST ROTATION CHANGE cuts your inventory in half. Simply reverse leads ("A" to "B").

AIR-SHIELD DESIGN transmits heat swiftly, greatly reducing "trip-outs" that result in time-consuming service calls.

4-YEAR LUBRICATION at factory practically eliminates reoiling. Motor has doubled oil supply.



It's that simple when you use General Electric oil burner motors

General Electric's oil burner motor will give years of reliable service on the oil burners you install, service, or build. This means a high degree of customer satisfaction with the furnace equipment you supply since you practically eliminate call-backs or emergency service calls.

Contributing to the motor's long life are a rust-resistant shaft, a special air-shield design, four-year lubrication at factory (see photos), a wear-resistant switch, and moisture-resistant Mylar* polyester film insulation.

All these extra-value features are yours when you specify "G-E motors" on the oil burners you buy. They're also ideal for replacement purposes. For more information, write Section 738-06, General Electric Company, Schenectady 5, N. Y.

* Registered Trade-mark of DuPont Co.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Readers' Problems

(Begins on page 108)

Q. That's a truly excellent article in the February, 1960 issue of FO&OH, by W. J. Hein, G-E ignition-transformer specialist. In it, gap spacing of .125" seems indicated in more than one part of the text, as proper for usual gun burners. I find that to be 1/8". Why do certain gun-burner manufacturers recommend the 50% greater gap spacing of 3/16", or .1875" decimally? I've been using the 3/16" with no resultant trouble what-so-ever. I'm wondering if I should switch to 1/8".

O. T. P., Knox, Idaho

A. Extended forward by the air from the blower, a spark is of U-shape, or the shape of a hairpin. Thus it has "reach," which enables it to light off the atomized fueloil, though the spark points are far enough from the oil spray to remain clean, with no carbon forming on them and causing short-circuiting with resultant ignition failure or delay.

Those who prefer the 3/16" gap declare it provides needed, extra "reach" over and above that provided by a 1/8" gap. Reason for the 1/8" gap is given in the W. J. Hein article: It's kind to a transformer.

Q. On this complicated, industrial, heating system serving factory buildings, at times the one condensate pump in the boiler room doesn't pump fast enough. The 60-gallon condensate tank next to the pump fills up, and condensate pours out of its vent pipe into the boiler room. Extending the tank's vent pipe outdoors was considered. But that would waste condensate. Is there any way out of this trouble, which occurs once every two weeks or so.

M. G. I., New Haven, Conn.

A. Install an additional condensate tank at the same level of the tank now in use, and connect them together top and bottom. The additional tank must be large enough to hold the condensate that now spills out of the present tank. Sixty or 100 gallons may be a good size for it.

Q. I saw an oil customer, who is a chemist, remove scale and lime from parts of his humidifier by dipping them in a chemical, which worked like magic. He said it was dangerous. Can you tell me what it was?

P. C. F., Reading, Pa.

A. Probably muriatic acid, a commerical form of hydrochloric acid. Plumbers use it safely, and you can learn to. But play safe! Ask the chemist or some other qualified person to teach you how to use it safely!

Q. Is a kit available to rebuild and modernize the rotary burner and controls of an installation made in 1931, using unheated fueloil. It's in a large factory. I'm asked to modernize completely and make it use No. 6 oil now.

N. F. W., Buffalo, N. Y.

A. You don't rebuild and modernize such a set-up; you replace it completely with 1960 equipment. This is as much different from the 1931 burner and controls as a 1960 automobile is different from the 1931 automobile.

Thousands of Successful Installations over a Six Year Period!

INSIST ON THE ORIGINAL STEEL

Permanent® Tank Bottom!

Distributor Inquiries Invited

Here is the only satisfactory answer to tank leaks. The cost is a fraction of the cost of a new tank. Permanent STEEL Tank Bottoms can be installed by one man in thirty minutes or less . . . seal absolutely and permanently. No outside contractor is needed. Bottom is secured to tank with five simple bands. Only STEEL bottoms give positive seal with no chance of leakage or buckling. Guarantee backed by large New England Insurance Company. Insist on the ORIGINAL STEEL Permanent Tank Bottom . . . now being used by over 800 reputable oil and service companies. . . . NOT an inferior copy. (Aluminum is weaker — will bend and buckle.) Three standard sizes . . . all 10" wide . . . in 60"; 66" and 72" lengths. Place a trial minimum order for three today!

Until we have appointed a distributor in your area, order direct from the factory in Baltimore.

Permanent Tank Bottom Company

600 Wyndhurst Avenue • Baltimore 10, Maryland

ATTENTION WHOLESALE DISTRIBUTORS!

Many choice areas available—to serve our repeat order customers—plus all national advertising leads and direct sales help.

Write immediately for all details and literature.

Shell "Certified Comfort"

–the profit plan for fuel oil distributors

"Certified Comfort" is Shell's tried and proved program for building year-round volume and profits for fuel oil distributors. It has been skillfully designed to benefit both customer and dealer. Here's how it works:

1. Customer gets steady, efficient heating with Shell's super-refined oil, the modern fuel.

2. Special additives in Shell's premium-quality heating oil keep fuel filters clean.

3. Customer pays no more than for ordinary heating oil.

4. Customer is assured of premium service . . . including degree-day system deliveries, anti-corrosion treatment of fuel tanks and metered delivery receipts.

5. *For you,* a full-scale cooperative advertising program makes use of television, radio, billboards, newspapers and direct mail. Available to all distributors of Shell Heating Oils upon request.

Now's a good time for you to contact your local Shell representative. You'll get full details. And remember, the "Certified Comfort" Plan is the Profit Plan for Shell Fuel Oil distributors only.

SHELL OIL COMPANY

CERTIFIED COMFORT
SHELL
HEATING OILS

How to solve pumping problems!

TO PREVENT FOAMING
USE VIKING positive, smooth-flow pumps

TO CUT HIGH SPEED NOISE
USE VIKING low-speed, quiet pumps

TO ELIMINATE SPASMODIC DISCHARGE
USE VIKING non-pulsating, even-flow pumps

TO STOP SLOW, UNCERTAIN PRIMING
USE VIKING positive, fast and sure priming pumps

DON'T COMPROMISE ON SIZE
USE the VIKING pumps to fit your need.
Our line is **Complete.**

QUIT TAKING CHANCES
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For Complete information, send for Catalogs DEE and GEE

VIKING
PUMP COMPANY
Cedar Falls, Iowa, U. S. A.
In Canada, It's "ROTO-KING" Pumps
Offices and Distributors In Principal Cities
See Your Classified Telephone Directory

VIKING TRUCK MOUNTING PUMPS

Industry Groups

(*Begins on page 41*)

Long Island OHI plans many Activities for this Autumn

THE LONG Island Petroleum Credit Manager's Association will conduct their Annual All-Day Credit Conference on Wednesday, September 14 at 10:00 AM, at Knapp Hall, L. I. Agricultural and Technical Institute in Farmingdale. This will be the fifth conference sponsored by the Oil Heat Institute of Long Island which provides an opportunity to discuss mutual credit problems and techniques. This year's theme will be "Using Your Interchange Intelligently."

The first fall membership dinner meeting will also be held on September 14, at 8:00 PM, at the same place. A well rounded interesting program is planned with Fred Burroughs, secretary of National Fueloil Council, as guest speaker.

An OHILI exhibit featuring "Oil Heat—the Jet-Age-Fuel" will be part

BOSTON-APTHORP OIL BURNER NOZZLES

Everything You Expect of a Nozzle!

1. Complete and perfect atomization.
2. Individually tested, BOSTON-APTHORP Nozzles deliver the correct gallonage, angle and type of spray, as marked.
3. Nozzle tip made of one-piece stainless steel, resulting in: (a) Uniform expansion and contraction. (b) Less heat conducted to the inside of nozzle than with brass, thus eliminating varnish build-up on inside vital parts. (c) Long life because stainless steel is tougher.
4. Fractional gallon sizes furnished standard with porous bronze filter.
5. Available in hollow and solid spray and standard angles of spray 30°, 45°, 60°, 70°, 80°, and 90°.

HOLLOW SPRAY

The hollow spray nozzle is designed for burners delivering a hollow air pattern. All of the atomized spray is delivered to the outside of the cone of spray.

SOLID SPRAY

The solid spray nozzle is designed for burners delivering a solid air pattern. The atomized oil is delivered equally throughout the entire cone of spray.

For details, write to:

BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Div.
7-17 WILLOW STREET
LYNN, MASSACHUSETTS

Stop Oil Leaks!

WITHOUT DOWN TIME and with UNIT in SERVICE!

Users' Reports Tell How OYLTITE-Stik can help you

"... to make instant repairs on basement storage tanks ... a great time saver."
A New York Oil Distributor

"... on seams of large oil tanks where weld was not perfect."
A Wisconsin Fuel Company

"... we punched a hole in the tank with an ice pick, then filled the tank and plugged the hole with the oil running out; it has held for months."
A Maryland Contractor

"... to seal small holes of oil storage tanks, created through condensation."
An Illinois Contractor

"... has done such a good job we do not want a service man to be without one."
A Pennsylvania Heating Company

"... to repair leaks in domestic tanks inaccessible for repair by other methods ... most satisfactory."
A Canadian Contractor

OYLTITE-Stik is one of the best time-savers and trouble-stoppers you can find.

• See your suppliers for OYLTITE-Stik or write direct on company letterhead for free sample.

LA-CO BRAND
LAKE CHEMICAL CO.
3086 W. Carroll Ave., Chicago 12, Ill.

Now's the time to buy a used truck from Mack

There's a trend underway among high volume truckers . . . toward shorter, lighter-weight trucks and truck-tractors. Long-haul fleets are buying them to take advantage of recent liberalization of length and gross weight limitations by many states.

In buying these new models, many fleet operators are trading in their present vehicles . . . some of them in almost-new condition. This means that the selection of high-value used trucks on our trading lots is wider now than in times past.

So, now is an unusually good time to select the used truck you may have been thinking about. It is possible to get not only dependable transportation, but first comers will be able to select the exact Mack they need—with famed Thermodyne® diesel power offered only by Mack.

The Mack-built Thermodyne diesel is one of the major reasons there are twice as many diesel-powered Macks on the road as the next nearest make . . . more than the next two makes combined. It's the reason, too, why Mack has been No. 1 in diesel truck sales for seven straight years.

Why not call or stop in and see your nearest Mack branch or distributor and find out about the fine used Macks and other good trucks and tractors he has in stock. He'll be glad to handle the financing and insurance for you, and your present truck may even serve as down payment. Mack Trucks, Inc., Plainfield, New Jersey. Mack Trucks of Canada, Ltd., Toronto, Ontario.

7880

MACK

HEADQUARTERS FOR THE FINEST IN

USED TRUCKS

Fuel oil & oilheat

PRINTED FORMS AND OPERATION AIDS
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Check items you are interested in. Attach to your letterhead, mail for information, prices, FREE SAMPLES:

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Serving 20,000 Petroleum Firms Over 30 Yrs.
DEGREE DAY SYSTEMS
39-30F 58 ST. WOODSIDE 77, N. Y.

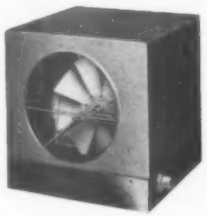
of the Suffolk County Fair, to be held at Islip (N. Y.) Speedway September 14-18. The exhibit will be moved to Roosevelt Raceway for the Long Island Fair October 8-16. The October general meeting will be held on Wednesday, Oct. 12, at Roosevelt Raceway, to coincide with the Fair and with the exhibit there.

The November meeting is scheduled for Patchogue, N. Y.

6th South Carolina Jobbers' Management Institute planned

A JOBBER Management Institute, the sixth, will be offered by the South Carolina Oil Jobbers Association at the University of South Carolina September 27 and 28. Chairman W. G. Willard, Jr., of the Jobber Development Committee and Tom Jackson in charge of publicity and the other members of this working committee of SCOJA have planned the Institute which is officially named "Oil Jobbers' Executive Workshop." This will be an executive institute and finances and oil heat service will

—Fully Automatic—
ROYAL
TURBOFAN—PUMP



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VERY PROFITABLE
EASILY INSTALLED . . . ON ALL FORCED AIR FURNACES
HIGH OUTPUT

ROYAL MANUFACTURING CO.
622 WASHINGTON SQ. BLDG.
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"REPS" Some Territories Open

Shortest route to
BIGGER PROFITS!

Time saved enroute means money in your pocket! Save time normally used on unnecessary backtracking and duplicate runs — use Du Mont 2-Way Radio. With 2-Way Radio you can have continuous contact between driver and headquarters for rerouting instructions, pick-ups, extra deliveries, etc. 2-Way Radio is the nearest thing to having your office phone in every truck — its so convenient, economical and useful.

Write for details

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DU MONT®
Mobile Communications Division
Allen B. Du Mont Laboratories, Inc. 750 Bloomfield Avenue, Clifton, N. J.

WHISTLER

Model E, the only whistle you can install without disturbing the present piping. Model D for new installations.

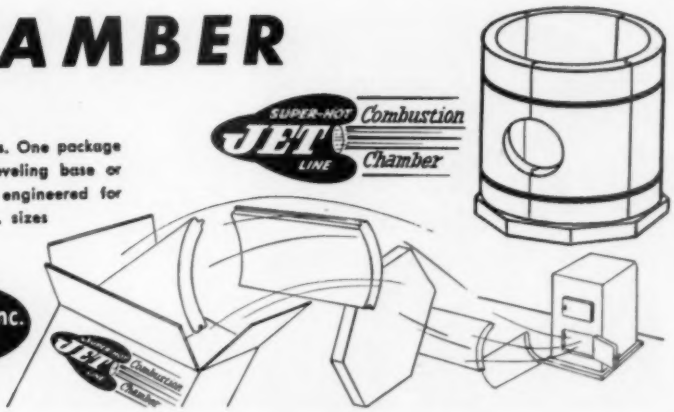
APPLIED MECHANICS COMPANY
381-389 CONGRESS ST., BOSTON 10, MASS.

FASTEST CHAMBER

FROM CARTON TO FIRING

So fast . . . so easy to install because there's fewer pieces. One package gives you everything you need including pre-cast self-leveling base or hearth. Designed with maximum combustion area . . . engineered for more complete fuel combustion—Immediate delivery . . . sizes 6/10 to 12 gallons per hour. Write for latest bulletin.

SUPER-HOT JET LINE Combustion Chamber



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Deluxe Floor Furnace

A really compact unit. Heavy duty floor grille, cast iron inspection door, over-size radiator. All welded, 14 ga. heat exchanger. Excellent replacement unit.

Also—Hi-Boy—Horizontal Lo-Boy—Counterflo

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24 Broome St. Salem, Virginia

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Thread and Gasket Sealing Compound
Slow dry — soft set.

Dopes more joints per dollar . . . prevents leaks at all pressures. Won't settle, harden, dry out or skin over in the open can. Write for Sample.

(If fast dry—soft set compound is desired use Rectorseal #2)

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RECTORSEAL #5
THE POSITIVE LEAK PREVENTER

HAYWARD

Rotary Atomizing Burners
¾ to 12 Gph

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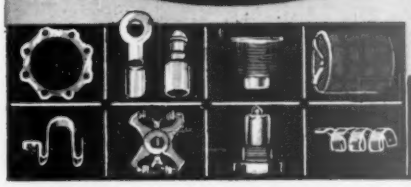

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be the main subjects covered.

Speakers participating in the Institute are: L. T. White, Cities Service Petroleum, Inc.; J. B. Shields, John Wood Co.; L. L. Snyder, an Omaha, Neb., jobber; and A. T. Williams, Humble Oil Co.

N. C. Jobbers' Association plans annual fall Meeting

THE ANNUAL Fall Convention of the North Carolina Oil Jobbers Association is scheduled for October 9-12 at the Grove Park Inn, Asheville, N. C.

Speakers will include Otis H. Ellis, general counsel of the National Oil Jobbers Association and Charles Burkhardt, managing director of Oil Heat Institute of America.

Passaic Dealers Hold annual Installation Dinner-Dance

THE PASSAIC County Fuel Oil Dealers Association will hold its annual installation dinner and dance on September 17, at the Cedar Cliff Restaurant in Haledon, N. J.

The proceeds from the souvenir ad-book published in conjunction with the dinner are used to supplement funds contributed by members for the promotion of oilheating.

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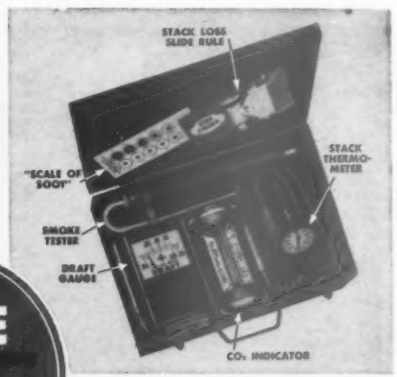

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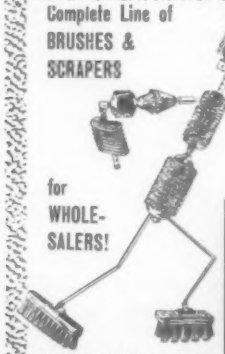

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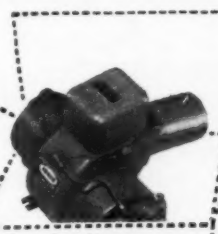

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Truck Talk

by Chet Cunningham

SOME OF THE GOOD MECHANICS I know are still confused about what a "hot" spark plug is and whether or not to use them in their fueloil trucks.

Too many truck owners and mechanics think that a "hot" spark plug is one that gives you a hotter spark. This just isn't so. And this wrong idea, can cause you trouble, because a plug that has too "hot" a range, can cause detonation or even preignition. Both conditions will result in serious engine damage.

On the other hand, too cold an operating plug causes premature fouling and usually results in power loss.

When plugs are called, "hot" or "cold" it is a reference to the heat range of the plug and its ability to conduct heat away from its firing tip. On any plug the heat must travel up the center electrode and out through the insulator to the shell, and from there through the plug seat to the cylinder head. The big difference between the hot and cold plug is the distance through which the heat travels to be dissipated. The further it goes, the "hotter" the plug. Most "hot" plugs are a little longer, physically, than the "cold" plugs.

Use the plugs this way. For your fueloil delivery rigs, you can use the hotter, the taller plugs. This plug keeps more heat at the plug tip longer, and even though your engine doesn't run as hot as it would on a long haul, the hotter range of the plug helps to burn off carbon deposits before they foul the tip.

The cold plugs—where the engine runs hot enough by itself to keep the plugs from fouling—are the ones to use in normal over-the-road driving, long hauls, or in your private car.

Take a look at your delivery rigs, could you save money by putting in "hot" plugs right now?

Three times as many retreaded truck tires are on the road today as there were in 1949, according to the Tire Dealers and Retreaders Association. You probably have some on your trucks right now.

Here are some tips from the tire experts about what to look for in recaps and what to watch for when you check your tires for recapping. Don't accept retreads if they have any of these faults:

1. Poor molding. Here the tread looks out of focus. The tread edges are not sharp, defined or even, and some tread areas may be missing. This is usually due to not enough tread rubber being used. The rubber never completely fills the tire mold, so can't produce a good tread. The cause also may be dirt in the mold or moisture in the mold. This is a sure sign of a sloppy operation.

2. Groove cracking. This may not show up until after inflation. Then cracks show at the base of the tread grooves. Again this is usually due to not enough tread rubber. The tire also may have been buffed insufficiently. If any of the old tread pattern remains it will cause trouble. Insist that your recapper follow minimum undertread thickness for your size of tire.

3. Tread tearing. Here the tread has been well formed, but has torn off sharp edges and corners when the mold was withdrawn. Opening the mold too fast will tear the tread, so will sticking of the mold due to dirt in it or poor lubrication of the mold.

4. Radial cracks. These are long cracks up from the sidewall toward the tread, and are almost always a sign of a shoddy recapping outfit. Usually the sidewall pattern was not completely buffed away and this sets up high stresses in the new rubber where they should not be. The cracks allow moisture to enter and that results in eventual tread separation.

Now, what type of used tire off your trucks will make a good retread? Tires without any bruises, cuts or fabric breaks, and with just a shade of tread left on them.

Do not try to retread tires with these four faults:

1. Old age side wall checking. This is caused by oxidation and simple tire age. Cracks extending into the upper sidewall become almost impossible to buff out. Cracks allow room for moisture to seep in—and tread separation.

2. Interior fabric failure. These usually show as tears in the surface of the tire interior where cords have broken because of stone breaks or puncture problems. This greatly weakens the tire. This tire can be saved with a section repair, but the Tire Retreading Institute advises against it.

3. Loose cords. When loose cords are seen on the inside walls of your tire, it means it has been run underinflated or when flat. The casing is weakened because these cords have over-flexed and ruined the bond between the cord and rubber. The life of this tire carcass is limited anyway, so why waste a recap on it?

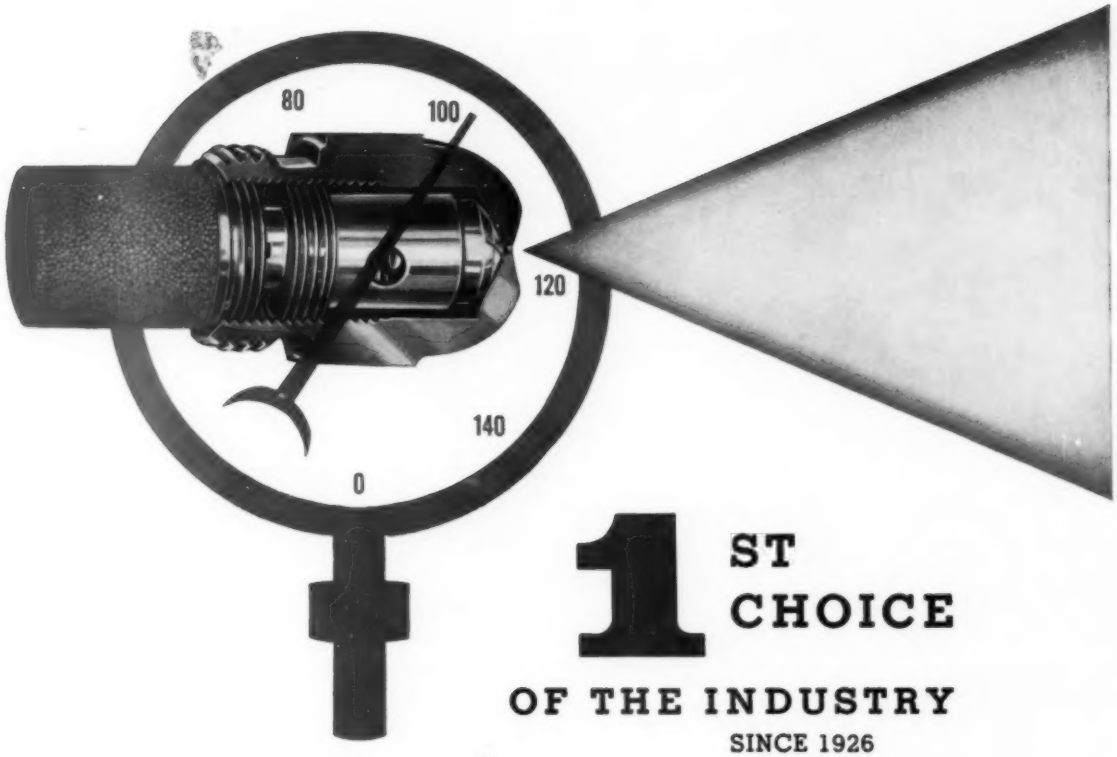
4. Bead problems. One of these is fabric injury near the bead. No amount of recapping can help save this tire. Other faults that make tires worthless as recaps include ply separation and tread separation.

The fast growth of the recapping industry has left the door open to a few get-rich-quick artists who do. Be sure your recapper is reputable and reliable. Most are honest, hard working businessmen. Take your business to them. Recapping is one of the best ways to reduce your tire costs.

Be sure of your recaps. If you get a bad one, you might not know it until the tread is scattered along the highway, then it's a little too late.

Don't get excited about speeding up the run-in on new brake linings. You can do more harm than good. Rapid or severe braking on new linings will give a definite pull to one side or dangerous drum smoking or both. Treat new linings like an overhauled engine.

Linings need time to seat properly before severe stops. Otherwise, linings may superheat and send resins to the surface resulting in dangerous brake grab. Use brakes carefully until they are seated, smooth down and cured to the surface.



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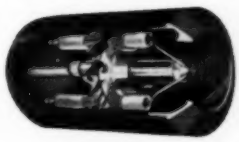
No matter how satisfactorily "test samples" may operate in the laboratory, reliable on-the-job, PERFORMANCE in the field is still the most positive and final of all nozzle tests. That's why, even after the most precise and carefully controlled manufacturing operations, each and every MONARCH nozzle is *individually* performance-tested on oil! Think of it! Every Monarch nozzle is individually tested for capacity, spray-angle, quality of spray and balance.

Why waste time and money "trying out" several ordinary nozzles just to find one good one if you can be assured of *results* the *first* time—*every time*—with 100% tested MONARCH nozzles?

Whether you are an Oil Burner Manufacturer, a Dealer or a Serviceman . . . You Can Be *Sure*—If it's a MONARCH NOZZLE!



AIR MIXING EQUIPMENT

COMBUSTION HEADS:
G-81-C Head is as easy to install as an ordinary Air Cone and Stabilizer. Produces high CO_2 with no "adjustments" to get out of order. For 3⅞" or 4" I. D. Air Tubes.

CONVENTIONAL:
Bladed Cone Rings and four blade Stabilizers for ordinary Air Tube replacement from 3½" to 8" I. D. Also special "Anti-Pulsation" equipment.

Also available: Flame Mirrors, "24" and "48" Nozzle Boxes, Racks, Wrenches, etc.

DEALERS: Buy from your Monarch Jobber. Write for Catalog "O"

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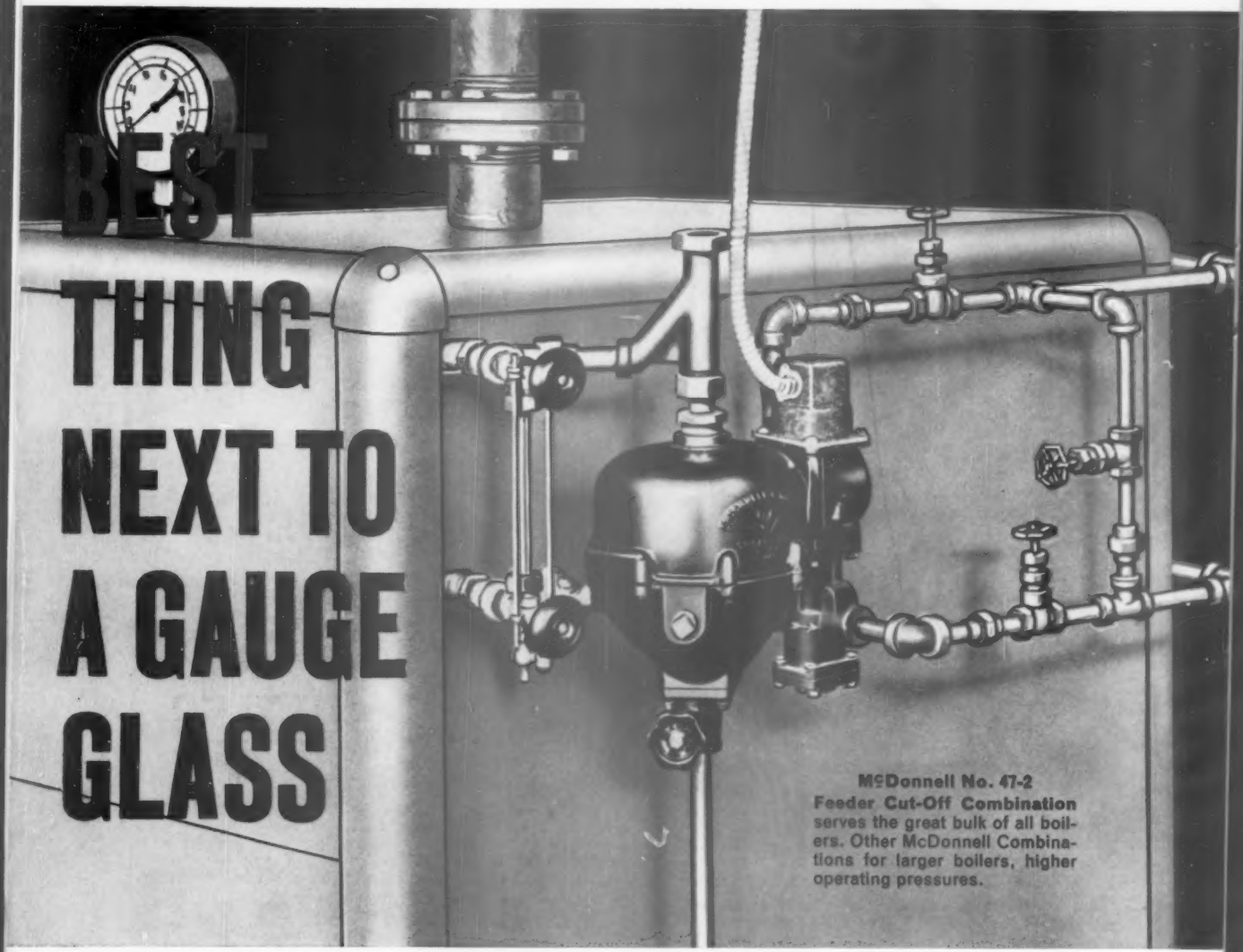
REMEMBER: It costs more to clean a nozzle than to replace with a new, precision, guaranteed-uniform Monarch Nozzle.

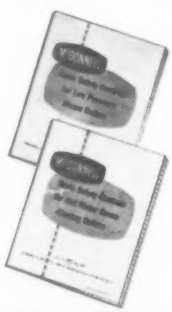
FOR BOILER WATER WATCHING



McDonnell No. 47-2 Feeder Cut-Off Combination serves the great bulk of all boilers. Other McDonnell Combinations for larger boilers, higher operating pressures.

McDonnell Feeder Cut-off Combination

It's a story that cannot be repeated too often. A low water condition can happen in any boiler, at any time, for any of dozens of reasons. And that includes hot water boilers too, *where you don't even have a gauge glass to begin with.* ☆ There are two accepted approaches to the problem—a boiler feeder which adds water *mechanically* as needed to maintain a safe level, or a low water cut-off which acts *electrically* to stop the burner if water level gets too low. ☆ If each one is a good idea, then it stands to reason that the one best answer is to use both together—a combined mechanical feeder and electrical cut-off. ☆ No one will argue with you either if you make your choice from the McDonnell line of feeder cut-off combinations—the best-known, most widely used products of their kind.



Here are the facts that will enable you to tell your story with complete conviction. Step by step they show just what controls are needed, and where, and why—in simple terms even your customers can understand. There's one for Steam Boilers (Bulletin L-711) and a companion one on Hot Water Boilers (Bulletin P-30). Write for your copies.

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